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VOLUME XXXVI NUMBER 2

Teachers College
RECORD

November 1934

An Objective Basis for the Distribution of Federal Support to Public Education*

By PAUL R. MORT

Professor of Education, Teachers College

THE question of national support for public education has been a matter of continued interest since Manasseh Cutler, in 1787, succeeded in obtaining the endorsement by the Continental Congress of the application of the Massachusetts policy of granting lands for schools to the newly organized Northwest Territory. The action of the Continental Congress, convened on the site of the Subtreasury Building in Wall Street, shows far more interest in the topic of national support than, prior to Dean Russell's recent analysis of Madison's *Journal*,[1] was supposed to exist.

The gradual expansion of the policy of granting land endowments on an objective basis was accelerated in 1862 and 1890 by the Morrill Acts, which also provided an objective basis for determining the amount of grants, and in the present century by the Smith-Lever and Smith-Hughes Acts, which represent definite attempts of certain groups to mold in a specific direction the educational development within the states.

* Acknowledgment for large assistance in the project reported here is due to Professor Eugene S. Lawler, of Northwestern University, who had immediate supervision both of the basic research carried on in this area by the National Survey of School Finance and of the further research reported here. Acknowledgment is due also to Professor David P. Harry, of Western Reserve University, for his work on the cost-of-living phase of the index briefly reported in this article.

[1] Russell, William F. "Federal Financing of Education." *School and Society*, Vol. XXXVIII, pp. 225-33, August 10, 1933.

Actuated by great national needs revealed by the World War, the National Emergency Committee on Education made recommendations for the distribution of $100,000,000 a year on bases objective in nature but so limited as to determine in a general way the channels of expenditure for at least half of the total amount. The activities which the National Emergency Committee's program was designed to stimulate particularly were the removal of illiteracy ($7,500,000), the Americanization of immigrants ($7,500,000), the promotion of physical education ($20,000,000), and the preparation of teachers ($15,000,000). The other $50,000,000 was to be used for equalizing educational opportunity in general. The work of the National Emergency Committee, together with the earlier stimulation and interest aroused by the Smith-Hughes Act, led to a decade of controversial discussion which was recently (1931) drawn into clear-cut issues by the National Advisory Committee on Education.

The report of the National Advisory Committee leans strongly toward general rather than specialized support and toward distribution by means of objective measures not subject to manipulation within a state or to administrative interpretation by authorities in Washington. It was pointed out by the National Survey of School Finance, in review of this situation, that "if Congress should decide to carry out a policy of Federal aid based on the broad lines laid down by the National Advisory Committee on Education, it would at present lack the techniques necessary to put such a policy into operation. Happily the work carried on in the various states during the last decade has paved the way for the development of the necessary techniques."[2]

THE NATIONAL SURVEY OF SCHOOL FINANCE

The development of such objective measures was set up as one of the important purposes in the program of the National Survey of School Finance. Discontinuance of the support of the National Survey in 1932 made the carrying out of this project impossible. The Survey, however, did succeed in treating extensively the problem of setting up objective measures of the needs of districts within states —measures which but for their complexity would largely meet the demands for an equitable, objective basis for the distribution of federal aid to the states.

[2] Mort, Paul R. *Research Problems in School Finance,* p. 132. Report of the National Survey of School Finance. American Council on Education, Washington, D. C., 1933.

The present writer has been enabled to undertake the work of simplifying these measures by means of grants from the Columbia University Council for Research in the Social Sciences. Included within the scope of the research that is now in progress are both the measure of need and the measure of relative ability of the states. The work on the measure of need has been completed. The work on the measure of relative ability is well under way. It is planned to make a complete report on both of these studies in a monograph to be published in the spring of 1935. It should be understood that there is considerable probability that when, as, and if the Federal Government enters extensively into the problem of federal support of education, it may well be on a large-fund basis.[3] On this basis complete support would be granted for a minimum program. The measure of relative ability will be required only in case there is used a small-fund plan, a combination of local and central support. Under this plan greater aid is granted to localities (in this case, states) which have less ability to support schools.

The present article gives a brief report of the methods used in the study of educational need and of the results obtained. A report on this investigation seems appropriate at this time because of the bearing which the availability of objective measures of need may have on the present educational emergency and on the development of long-time federal policy.

The National Survey of School Finance applied the techniques developed by the present writer and his students to the data from thirty-one states in order that a measure of need could be developed which would be free from fluctuations arising from idiosyncrasies within individual states.[4] The measure developed provides adjustments to the differences in cost arising from variations in density of population and for differences in cost between elementary and secondary schools.

There are two objections to the use of this measure for the distribution of federal aid. In the first place, the degree of sensitivity which this measure possesses to correct for variations in density of population is greater than it need be in dealing with such large units

[3] Russell, William F. "Federal Aid–Boon or Bane." *Teachers College Record,* Vol. XXXV, pp. 541-52, April 1934.

[4] The results of this study are recorded in Mort, Paul R., *State Support for Public Education,* Chapter IV and Supplement III. Report of the National Survey of School Finance, American Council on Education, Washington, D. C.

as states. The measure is therefore more complex than necessary for determining a satisfactory distribution of federal funds to states. It is built up in the individual states from individual school district data. The Federal Government would not need to deal with individual school districts. Accordingly, mass measures, with the necessary corrective features for density of population, promise to serve the purpose equally well as the more detailed district data.

The second objection to the use of the state measure as the national measure is that the state corrections for density are sensitive to certain practices within the state which should not be allowed to influence a national measure. For example, two states with the same population distributed throughout their respective territories in practically an identical manner might be revealed by the state measures as having different educational needs because one state has retained a larger number of one-teacher schools and small high schools. It is, of course, true that a state having many consolidated schools will of necessity furnish a greater amount of transportation, and the inclusion of such costs in the measure of need will tend to equalize the difference between the two situations described above. But in order to avoid the possibility of any state's being favored merely because of an archaic type of organization or being discriminated against because of an efficient and economical type of organization, it is important that the measure of educational need be free from state policies with respect to consolidation.

The problems to which this study has addressed itself may then be stated as (1) the elimination, from the measures already developed, of sensitivity and complexity not needed for interstate comparisons, and (2) the elimination of those features of the measures which when used in interstate comparisons would be influenced by differences in state policies.

The method of attack in this study was, first, to improve the present measures so that the differences in policy from state to state would not influence the amount of aid distributed by the Federal Government. Following this the measure was simplified by substituting for its complex features a simple, objective index. The result was a measure of need much simpler than the available measures of need for use within states. This total measure was then subjected to corrections for variations in cost of living among the states.

IMPROVEMENT OF THE PRESENT MEASURE OF NEED FOR INTERSTATE USE

All of the data for the thirty-one states were subjected to a careful recheck in order to eliminate any discrepancies which would affect the validity of the investigation. This was necessary because of the difference in objective of the National Survey study and the present investigation. The National Survey dealt with trends in the thirty-one states, whereas this investigation deals with the total measure of need for the individual states. In the original data, samplings of districts were used in some instances. Naturally this procedure could not be used in the present study because state totals were required.

A difficulty arose from the method of correcting the state index for density of population. The plan recommended in the National Survey index for state use was the counting of one elementary classroom for each one-teacher elementary school. This procedure is better for dealing with small areas than one that utilizes average daily attendance corrected for sparsity of population. Its use as a measurement of need within states is justified by the fact that a school having only one teacher is actually only one elementary classroom, regardless of its size. To count its load as that of two classrooms because it has forty-two pupils in average daily attendance would tend to encourage continuation of such schools. This is particularly true in states using the district system. For the purpose of the present study such reasoning does not apply since aid would not in all probability be distributed to individual school districts. Accordingly, in the ultimate measure proposed, the difficulty is cared for by an application of the density measures somewhat along the lines proposed by the present author in his first study of educational need.[5] It was necessary in the present study to develop a measure for the state on a rational basis in order that it might serve as a criterion for the development of a direct density correction.

In order to estimate all schools of the same size equally, whether taught by one teacher or by more than one, a special correction was made in the case of each state. Enough elementary classrooms were added to the calculated educational need of the state to bring the total number of educational need units up to what it would have to

[5] Mort, Paul R. *The Measurement of Educational Need.* Contributions to Education, No. 150. Bureau of Publications, Teachers College, Columbia University, 1924.

be in order that each school having twenty-one or more in average daily attendance would be counted according to the index of need regardless of the number of teachers employed. This represented a partial rational correction for the difficulty encountered.

Another partial correction of this difficulty was made in the method of handling transportation costs. The National Survey recommends that for use in the individual states the transportation phase of the index be based upon practices within the states. With the item of transportation added to the cost of the small schools, some adjustment is made for the effects of different policies within the states with respect to consolidation. But this requires that the policy in counting transportation costs be uniform. It would not be equitable to count transportation costs in high-expenditure states as equivalent to transportation costs in low-expenditure states. Investigation showed that a fairly satisfactory correction for this variation in level of expenditure could be made by counting the transportation expenditure in the state as equivalent in classroom units to the quotient obtained by dividing the total expenditure for transportation within the state by the median expenditure per elementary classroom in the state. This correction is based on the rather close relationship between unit expenditure levels for transportation and unit expenditure levels for all other phases of education.[8]

Another problem which arose in determining the total need of each state for the purpose of this study was the variation in cost between schools for white and schools for Negro children in the states with separate school systems. To meet this situation the schools for Negro children were not considered in the calculations. There were two reasons for this: first, the state which supports a dual system of schools is necessarily handicapped in its organization; second, it is considered that the practices in the white schools are more typical of conditions which bear upon this investigation than the practices in the Negro schools. The measures resulting from this study can be applied either to the total school population of the state, utilizing standards for white children and assuming a unitary system, or to each system within the state. The policy to be adopted by the Federal Government would depend upon the answer to the question:

[8] Little, Harry A. *Potential Economies in the Reorganization of Local School Attendance Units.* Contributions to Education, No. 628. Bureau of Publications, Teachers College, Columbia University, 1934.

What degree should the additional costs arising from a dual system be considered in granting federal aid?

Variation in relative support for secondary and elementary schools was eliminated by applying the standard index of high school costs to elementary school costs. The index used was 1.70. In other words, one high school pupil unit was taken as equivalent to 1.70 elementary pupil units. This is the central tendency of the practice of the thirty-one states studied by the National Survey. For convenience in statistical procedure the total educational need of each state was finally expressed in terms of its ratio to the educational need that would represent the total load, with the pupils all living under urban conditions, so that all classes could be of optimum size and no transportation would be required. For example, in Alabama the total number of elementary units of educational need is 469,191. The educational need in the state if all children lived under strictly urban conditions would be 367,517 units. The resulting index is 128, taking 100 as representing the educational need if all of the pupils lived under strictly urban conditions. The resulting educational indexes for thirty-one states are given in Table I. This table shows also the breakdown of the total index into its component parts.

The index given in this table is a close approximation to a valid measure of need of the various states. There are certain other factors not mentioned in this report which cause this measure to fall somewhat short of complete validity and for which it has not been found possible to develop satisfactory corrections. In some degree these factors were taken into consideration in developing the simpler measures, which are therefore rendered more valid than the statistical correlations indicate. These problems will be discussed in detail in the more complete report to which reference is made in the opening paragraphs of this article.

SIMPLIFICATION OF THE MEASURE

The measure of need as refined by the National Survey is based on the actual average daily attendance in elementary schools in cities and villages having an average daily attendance of more than 290 pupils in elementary schools, and upon the actual average daily attendance in high schools in cities and villages having more than 725 high school pupils in average daily attendance. In communities hav-

TABLE I

INDEXES OF EDUCATIONAL NEED, BY STATES AND TYPES OF TERRITORY

State	Index of Educational Need for		
	Urban Territory	Rural Territory	All Territory
Alabama	100	135	128
Arkansas	101	135	129
Colorado	100	152	130
Connecticut	100	123	107
Delaware	100	134	116
Florida	101	136	119
Georgia	101	133	124
Illinois	100	151	115
Iowa	101	168	144
Kansas	101	162	140
Kentucky	101	134	126
Maine	100	152	132
Maryland	100	130	113
Minnesota	101	155	131
Montana	100	170	145
Nebraska	101	169	148
Nevada	101	167	144
New Hampshire	100	161	124
New Jersey	100	122	104
New Mexico	101	146	136
North Carolina	101	123	118
North Dakota	101	188	175
Oklahoma	100	135	125
Oregon	100	185	146
Rhode Island	100	135	103
South Carolina	101	133	126
South Dakota	100	184	170
Utah	101	118	110
Vermont	101	163	144
Washington	100	140	119
Wisconsin	100	145	123

ing a smaller number of elementary and high school pupils, each pupil was given a weighting above one. This weighting increased as the size of attendance in the community decreased. Obviously, the sum total of educational need arising from elementary schools in communities having more than 290 pupils can be obtained by the simple procedure of taking the sum of such pupils in the state. Similarly, the educational need in the state arising in communities having more than 725 high school pupils is equal to the number of such high school pupils. In other words, such communities need not be considered individually but can be lumped together in a single figure for elementary and secondary schools. From this analysis it is clear that there is no necessity for simplification in this area.

In the case of small schools, the only combinations possible are those of communities near enough the same size for the same weighting to apply. Procedure using such combinations would be too complex. It is desirable to find a simple measure by which the excess need obtained by the weighting process in individual communities, when the state index is used, may be estimated from gross data. The fundamental cause for the excess weighting in the small communities is sparsity of population, which makes the operation of classes of normal size impossible. It should be possible, therefore, to predict this correction from density of population in those areas of the state in which schools must operate small classes. The final basic measure will then be the total number of elementary pupils in the state, plus the total number of high school pupils, weighted for differences in cost between elementary and high school pupils, plus a correction for sparsity of population. Eventually it will be desirable to correct this measure for cost of living variations among states.

In developing a density measure, certain important conditions had to be met. The average density in the state could not be used inasmuch as the moment the density reaches that degree which makes classes of normal size possible, increase in density no longer results in decreased costs. The inclusion of population and territory in excess of this critical density would tend to offset the sparsity of population in the rural areas in the measure, whereas, as a matter of fact, it should have no such reducing effect. The excess cost of operating schools in the rural areas of New York, for example, are, as an actual fact, in no way reduced by excessive density of population in New

York City. The density measure therefore must be limited to the areas in which the costs of education vary with density of population, that is, to communities having less than 725 high school pupils and to those having less than 290 elementary school pupils. While theoretically the division should be made exactly at that density point where variation in educational cost ceases, in actual practice considerable variation from this point may be permitted without significant disturbance to results. For example, the density figure for the State of New York, eliminating New York City, is far closer to the optimum than the density figure including New York City. Such a density figure, however, includes considerable excess density which should not be allowed to influence the ultimate figure. Practically, a line of division should be determined from data which are regularly available to the Federal Government. There are three fairly satisfactory divisions that can be readily made with census data. The portion of the population that can be taken as living in the more thinly populated sections of the state may be (*a*) rural farm population, (*b*) rural farm population plus the inhabitants of villages of less than 1,000 inhabitants, or (*c*) the rural population, which is defined as population living in places of 2,500 and less.

To check on the optimum point of division, the school attendance in each state was classified into the following population categories: (*a*) More than 100,000 inhabitants; (*b*) 30,000 to 100,000; (*c*) 10,000 to 30,000; (*d*) 5,000 to 10,000; (*e*) 2,500 to 5,000; (*f*) 1,000 to 2,500; and (*g*) communities less than 1,000 and open country.

In order to have a constant standard of comparison, the educational need in each state as established by the National Survey index for each type of territory was compared with the figure for educational need which would have obtained if the pupils in the schools of each type of territory had been accommodated in the most economical type of schools. The results show that in places of more than 2,500 population the extra educational need incurred because of small schools and small class size is negligible; in schools in villages of from 1,000 to 2,500 population there is an appreciable extra educational need for high schools; and in schools located in villages of less than 1,000 and in the open country the extra need for both elementary and high schools is considerable.

A statistical study of various combinations of measures revealed that the best division point was at 2,500. Separate treatment was given to villages of from 1,000 to 2,500, but this did not increase the reliability of the measure.

For the purpose of this study the actual attendance in schools in urban and in rural territory cannot be used as representing the school attendance of those territories. Many of the pupils in the villages and cities come from the open country where transportation must be provided. Accrediting such pupils to the open country would, of course, give them a larger weighting, which would tend to offset this cost of transportation. This necessitates proportioning the average daily attendance of the schools in a given state in accordance with population of the various types of territory.

It will be necessary, in addition, to eliminate uninhabited territory when calculating the density of population. Inclusion of large areas, such as the eight million acres of unorganized territory in the State of Maine, the desert areas in Western states, areas of lakes and swamp lands, tends artificially to decrease the density. The density affecting school costs is really the density of occupied land. This situation can be met by using acres of farm land or acres of improved farm land given by the census. The former seems to be the more satisfactory measure inasmuch as the farm land includes pasture and woodland which disperse population groups sufficiently well localized to use the same schools. The superiority of this measure was shown in the original studies of this problem made by the present author.[7]

The fact brought out so clearly by Clark that the proportion of children of school age varies from state to state points to the conclusion that population of school age rather than total population should be the population measure.[8]

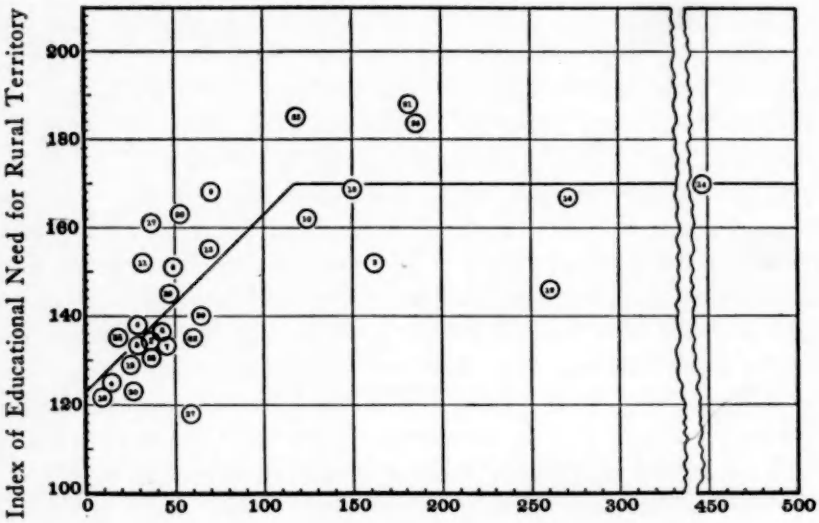
From the above considerations the best density measure seems to be the population five to twenty years of age living in rural territory expressed inversely in terms of acres of farm land per unit of such population. A distribution of the various states was made according to the acres of farm land per inhabitant of the five to twenty years age group living in rural territory against the total educational need index for such territory. This is shown in the chart on page 102,

[7] Mort, *op. cit.*, p. 52.

[8] Clark, Harold F. *The Effect of Population upon Ability to Support Education.* Vol. II, No. 1, Bulletin of the School of Education. Indiana University, Bloomington, Indiana, 1925.

where the educational need index is used as the ordinate and the density figure as the abscissa. The educational need index, it will be remembered, is the ratio of the actual need to the need which would exist if the children concerned were all in schools of optimum size. The index of 120, for example, means that the actual need is 20 per cent greater than the need would be under optimum conditions. It will be noted that the density figure is expressed in such a way that the larger the figure, that is, the greater the number of acres per inhabitant, the smaller the density. This distribution gives some rather interesting results.

DISTRIBUTION OF THIRTY-ONE STATES BY INDEX OF EDUCATIONAL NEED AND ACRES OF FARM LAND PER INHABITANT OF SCHOOL AGE FOR RURAL TERRITORY



Acres of Farm Land per Inhabitant Five to Twenty Years of Age Living in Rural Territory

KEY TO STATES

1. Alabama
2. Arkansas
3. Colorado
4. Connecticut
5. Delaware, Kentucky
6. Florida
7. Georgia
8. Illinois
9. Iowa
10. Kansas
11. Maine
12. Maryland
13. Minnesota
14. Montana
15. Nebraska
16. Nevada
17. New Hampshire
18. New Jersey
19. New Mexico
20. North Carolina
21. North Dakota
22. Oklahoma
23. Oregon
24. Rhode Island
25. South Carolina
26. South Dakota
27. Utah
28. Vermont
29. Washington
30. Wisconsin

It will be noted that all the southern states are located near the lower left-hand corner of the distribution because of their relatively dense population, even when only white population is concerned, and because of their low classroom unit index. There is, obviously, a definite relationship between density and the educational need index until a density of approximately 200 acres of land per inhabitant of the five to twenty years age group has been attained. As density decreases beyond this point, the relationship disappears. A line drawn from the point for zero acres of land per inhabitant and a classroom unit index of 122, and the point for 118 acres of land per inhabitant and a classroom unit index of 170 seems to be approximately the best fit for all the states having less than 118 acres of land per inhabitant living in rural territory, as defined above. A line drawn directly to the right at the height indicating a classroom unit index of 170 seems satisfactory. The difficulties of expressing a curved line in a formula useful in drafting legislation dictated the use of a combination of straight lines. As a matter of fact, however, a test fitting of a second degree parabola to these data yielded a larger standard error than the combination of straight lines shown on this chart. The above combination of straight lines can be expressed as follows: For rural territory the educational need index can be determined by adding to 122, four-tenths of a point for each acre of farm land per inhabitant of the five to twenty years age group in such territory, provided such index shall not be more than 170.

Attempts to improve the index by the utilization of a great mass of other calculations which will be discussed in the more extended report failed to improve this figure. In other words, the apparently most rational measures are the most reliable. It is believed that the variations shown for other states as well as for the southern states are from a norm which forms a theoretical criterion useful for comparisons among states (see the chart). This is borne out by an analysis of conditions in the other varying states. The variations of New Hampshire, of Vermont, and of Iowa may be partially explained by the high state indexes arising from their abnormal use of one-teacher schools. The low index in Utah may be explained by the tendency for the people in that state to live in settlements in the winter rather than to remain on the ranches. Efficient district organization is probably a factor. The presence of the county high

schools in Colorado may be a factor in giving Colorado a lower index. No special explanation has been found for the low index of New Mexico unless the conditions typical of Utah apply in some degree to this state also. When sparsity of population reaches a certain degree and children are sent away to board in high schools and in elementary schools, the index of educational need actually used is too small. This is because the living expenses of the children do not appear in the school records and were not considered in our computations. A further check on this point is now being made.

The total index of educational need for each of the thirty-one states may be determined by combining, first, results of the formula for rural territory with, second, the index of need for urban territory, each weighted according to the percentage of population living in such territory. The average of the per cent deviations of these total state indexes from the actual indexes, calculated from the educational data of the various states, was 4.13 and the standard error of the per cent deviations was 5.63. If the educational need of the states should be estimated solely from the number of children in elementary school and in high school, the average per cent deviation would be 9.76 and the standard error of the per cent deviations would be 12.61.

On the whole, the indications are that the objective measures proposed are somewhat better than the standard error of estimate indicates, inasmuch as the proposed measures are in a considerable degree free from the influence of the factors which have the greatest influence in reducing the validity of the National Survey state index for use in interstate comparisons.

COST-OF-LIVING CORRECTION

Studies of cost of living have always indicated differences in cost between the urban sections and the rural sections of a state. If the urban proportion of states were the same, it would not be an uncertain factor in making comparisons between states, since each state would have somewhat near a constant correction. The degree to which the percentage of urban population and of other elements which affect cost of living varies among states is so great, however, that in any long view of the problem of measuring need of the various states a correction for cost of living is required. For immediate

practical purposes the argument seems to justify ignoring such a correction. Within the financial limits in which the Federal Government is likely to operate in the beginning stages of recognizing a responsibility for basic support for education, the ignoring of the cost of living, by and large, will not be a disturbing factor. The reason is that, generally speaking, cost-of-living corrections would apply to the wealthier states, whereas on any basis of grants, whether it be on a flat educational need basis or on an educational need and relative ability basis, the poorer states will fall far short of obtaining the funds which a reasonable national minimum would justify.

In any adequate consideration of federal aid for education, both the needs of the poorer states educationally and the adjustment of the federal, state, and local tax systems must be taken into consideration. The most urgent need lies in the correction of the national minimum. Until this is attained, the question of absolute equity on the tax side may well be deferred. However, apart from the angle of complexity, there is no objection to the introduction of cost-of-living corrections from the very beginning. The decision with respect to using cost-of-living corrections really turns upon the question of whether or not absolute equity of measures shall be introduced at the cost of some increased complexity until such time as the worst features of the present system of support have been corrected. Whatever may be the desirable policy with respect to cost-of-living corrections, it is highly important that those persons concerned with this problem have some estimate of the effects of cost-of-living corrections.

Fortunately in considering this problem it was possible to obtain the services of Professor David P. Harry, of Western Reserve University, who made the pioneer studies in New York, Pennsylvania, and Ohio, and whose techniques have been utilized in studies made in Colorado, Kansas, Missouri, and New Jersey. Dr. Harry's consideration of this problem, which will be given in full in the more complete report of this investigation, leads to the conclusion that a fairly satisfactory correction can be obtained by applying a flat correction to the educational need arising in communities of more than 500,000 population, a smaller correction for communities of from 100,000 to 500,000 population, a smaller correction for communities of from 30,000 to 100,000 population, and a still smaller correction for communities of from 10,000 to 30,000 population.

It must be remembered that we are interested only in obtaining a total figure for the state. The correction for communities of a given size represents an average correction for these communities. If we were dealing with these communities as individuals, it would not be possible to make corrections purely on a population basis.

Dr. Harry proposes a 30 per cent correction for the educational need arising from the first group, a 25 per cent correction for the second group, a 20 per cent correction for the third group, and a 15 per cent correction for the fourth group. Such flat corrections have the objectionable feature of not differentiating among communities of the same size in different sections of the country. The figures, however, give some idea of the nature of the influence of cost-of-living corrections. In the more complete report techniques for correcting the above conditions are developed.

Table II shows the effects upon the total educational need of the various states of applying such corrections. It also gives the educational need index of the states, corrected for cost of living.

The cost-of-living correction was obtained by adding to the total educational need units for the state the additional educational need units arising from the cost-of-living correction in the cities and then dividing this total by the original total. This has the effect of expressing the cost of education, when the cost of living is taken into consideration in a given state, as a percentage of the basic cost.

BASIC PUPIL DATA

The discussion throughout the preceding sections has been in terms of the average daily attendance as the fundamental measure of need. There are certain considerations that might well lead to a decision to use census data rather than attendance data. The choice between attendance data and census data rests fundamentally on the attitude which the Federal Government should take toward school support in the states.

Assuming that the funds for the support of all schools, public and private, arise from the people of the state, either by taxation or by other methods, there would be some justification for the Federal Government to grant aid to the states in proportion to the total educational task, and to leave to the state the decision concerning the question of granting any of the support thus obtained to other than tax-

TABLE II

Indexes of Educational Need and Correction for Cost of Living

State	State Index of Need as Derived from Prediction Formula	Cost-of-Living Index	Composite Index of Educational Need	Composite Index of Educational Need N. J. = 100	Composite Index of Educational Need U. S. Average = 100
Alabama	124.4	104.5	130.0	109.4	95.7
Arizona	146.3	104.8	153.3	129.0	112.8
Arkansas	128.3	102.4	131.4	110.6	96.7
California	115.8	116.7	135.1	113.7	99.4
Colorado	139.4	108.1	150.7	126.8	110.9
Connecticut	107.8	115.1	124.1	104.5	91.3
Delaware	116.4	110.3	128.4	108.1	94.5
Florida	116.4	107.7	125.4	105.5	92.3
Georgia	124.8	104.6	130.5	109.8	96.0
Idaho	141.9	101.3	143.7	121.0	105.7
Illinois	112.3	114.6	128.7	108.3	94.7
Indiana	119.2	108.5	129.3	108.8	95.1
Iowa	133.3	105.2	140.2	117.9	103.2
Kansas	145.2	105.5	153.2	128.9	112.7
Kentucky	125.9	104.1	131.1	110.3	96.5
Louisiana	120.0	105.5	126.6	106.6	93.2
Maine	121.8	104.5	127.3	107.1	93.7
Maryland	113.5	114.1	129.5	109.0	95.3
Massachusetts	102.9	118.2	121.6	102.4	89.5
Michigan	112.6	113.6	127.9	107.7	94.1
Minnesota	128.6	108.3	139.3	117.2	102.5
Mississippi	128.8	101.7	131.0	110.3	96.4
Missouri	125.6	109.3	137.3	115.6	101.0
Montana	145.1	103.6	150.3	126.5	110.6
Nebraska	148.1	105.6	156.4	131.6	115.1
Nevada	145.5	102.8	149.6	125.9	110.1
New Hampshire	115.1	107.7	124.0	104.4	91.2
New Jersey	104.4	113.8	118.8	100.0	87.4
New Mexico	154.3	102.4	158.0	133.0	116.3
New York	105.9	120.9	128.0	107.7	94.2
North Carolina	123.3	103.2	127.2	107.1	93.6
North Dakota	160.1	101.4	162.3	136.6	119.4
Ohio	112.4	112.9	126.9	106.8	93.4
Oklahoma	133.9	104.5	139.9	117.8	102.9
Oregon	137.2	109.0	149.5	125.8	110.0
Pennsylvania	109.8	111.0	121.9	102.6	89.7
Rhode Island	102.2	118.8	121.4	102.2	89.3
South Carolina	124.2	103.0	127.9	107.7	94.1
South Dakota	158.5	101.2	160.4	135.0	118.0
Tennessee	124.0	105.1	130.3	109.7	95.9
Texas	140.5	105.8	148.6	125.1	109.3
Utah	124.1	107.8	133.8	112.6	98.5
Vermont	130.6	101.8	133.0	112.0	97.9
Virginia	124.1	105.3	130.7	110.0	96.2
Washington	123.5	111.1	137.2	115.5	101.0
West Virginia	122.6	103.2	126.5	106.5	93.1
Wisconsin	121.6	109.1	132.7	111.7	97.6
Wyoming	150.1	102.2	153.4	129.1	112.9

supported institutions. Perhaps a more defensible attack on the same problem would be to grant federal aid in terms of attendance data and to define "attendance" as attendance in any schools recognized by the state as subject to public support from local taxation or state aid.

Those interested in extension of the scope of public support would probably be more interested in the latter method since the state would really profit by extending the scope of its support. In the case of the Maine academies, for example, the inclusion of privately controlled schools would operate to increase the attendance on which federal grants would be based. If the total grant were made in terms of the educational task faced by the people, that is, by the use of the census measure, the state would receive the complete grants regardless of its local policy with respect to scope of public support. There would be no reward from the Federal Government for the extension of the scope.

There is another situation that favors the census measure. Census data are collected directly by the Federal Government and are therefore not subject to manipulation within the state. Also, such data could be used directly as obtained from the federal census. It should be understood that the situation obtaining in the relationship of the Federal Government to the states is a determining factor in giving something of a clean bill of health to census data. The same situation does not hold between the controlling state and its subordinate units.

Census indexes are not given in the table because of the fact that a check on their validity requires important differences in the basic need measure, the presentation of which is denied by the scope of this article. A complete presentation will be given in the more extended report.

SUMMARY OF MEASURES

The complete measure of educational need may be summarized as follows.

A. *Using average daily attendance data*

1. Divide the total average daily attendance in elementary grades in each state between urban and rural territory in proportion to the number of children five to twenty years of age residing in each type

of territory. Divide the total average daily attendance in high school grades between rural and urban territory in the same manner.[9]

2. For places of more than 2,500 population
   a) Count as one unit of educational need each elementary pupil in average daily attendance in Grades 1-8 in cities and villages with a population greater than 2,500 (Grades 1-7 in eleven-year school systems).
   b) Count as 1.7 units of educational need each pupil in average daily attendance in high schools in places with a population greater than 2,500.
3. For places under 2,500 population
   Apply the process outlined in (*a*) and (*b*) above to elementary and secondary attendance data for rural territory and multiply the results by the sum of 1.22 plus four-thousandths times the number of acres per rural inhabitant of the five to twenty years age group, provided, however, that the amount added to the constant, 1.22, on account of the number of acres per inhabitant shall not result in a sum greater than 1.70.
4. If desired, apply cost-of-living corrections to the total of the above computations.

B. *Using census data*

1. Count one unit of educational need for each inhabitant of the five to twenty years age group living in villages and cities of more than 2,500 population.
2. The number of units to count for each inhabitant of the five to twenty years age group living in villages of less than 2,500 and in the open country shall be 1.22 plus four-thousandths of a unit of educational need for each acre of farm land per inhabitant of the five to twenty years age group living in such territory, provided that in no case shall the number of units counted for each such inhabitant exceed 1.70.
3. If desired, apply cost-of-living corrections to the total of the above computations.

The above procedures will give different totals since the census population is greater than the attendance population. In computing

[9] Average daily attendance figures referred to in the following steps are the average daily attendance figures resulting from this process.

the cost of any given educational program this fact must be taken into consideration. The scale is different. It is like making a choice between yards and meters. A given expenditure per *census* unit of need is equal to an expenditure fifty-seven hundredths as great per *attendance* unit of need. In other words, a fifty dollar program expressed in terms of average daily attendance is the same as a twenty-eight and a half dollar program expressed in terms of census population five to twenty years of age.

After Three Decades of Scientific Method in Education*

By HAROLD RUGG

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WHEN our program was planned, it was expected that a preliminary report of the Committee on Scientific Method in Education of the National Society for the Study of Education, would be the basis for the discussion. That work, however, has been delayed, and although several members of the Committee are to take part in the discussion, we shall all do so as individuals and not as reporting members of the Committee. I trust, therefore, that you will regard my comments merely as tentative hypotheses upon which some of the analytic work of the Committee will be based. The theses which I submit are personal generalizations which have been drawn from some years of use and study of quantitative procedures.

II

I am not disposed to labor the first thesis—namely that education is not, and cannot be, a "science." I shall merely illustrate it briefly, primarily to provide the background from which to get more fundamental issues before us.

Some of us on the Committee hold that education is essentially an art—an art and a technology. It is not a science in the sense that physics, chemistry, and physiology are sciences. Each of these is *a unique body of established primary concepts.* Note, for example, the validity of such primary concepts of physics as: "the force of gravitation," "the wave-particle behavior of the electron," "the Generalized Theory of Relativity," "the atom constitution of matter, electricity, and energy," "the Principle of Indeterminacy." Similarly, zoölogy, botany, physiology, and related fields owe their partial ac-

* A paper read before the National Council of Education, February 24, 1934, by Professor Rugg, as chairman of the Committee on Scientific Method in Education.

ceptance as sciences to the tentative success of their workers in developing such primary concepts as "organism," "integration," "natural selection," and "evolution."

In approximately four centuries of development, the physical scientists have supplied us with the kinds of information which we need about the inorganic world. Students of the scientific method tend to agree, however, that it is only in the physical sciences that a "reasonably adequate set of primary concepts has yet been isolated." Pointing to the issues that are unresolved among the students of the theory of "natural selection," "emergence," and the like, they insist that even within the field of the biological sciences, the primary concepts are not yet adequate. And even in the physical sciences, they maintain, it is necessary to qualify the characterization of the primary concepts as "adequate." Witness, for example, the current questioning of the "Principle of Indeterminacy," and of relativity and the quantum theory.

Now the so-called scientific study of education has not produced such a body of unique primary concepts. On the contrary, it has taken over the assumptions and techniques of the physical sciences and has applied the primary ideas which have been built up in the contributory sciences of physiology, psychology, and sociology. Hence our insistence that it is an art and a technology. In the same manner that medicine builds bodies by utilizing the concepts of physiology, endocrinology, and the like, and that engineering builds machines and power plants successfully by using the concepts and principles of mechanics and mathematics, so education builds personality by discovering and putting to work the primary ideas and generalizations of physiology, psychology, sociology, and, to a lesser extent, of the physical sciences. But a generation of quantitative study of education has failed to reveal an independent set of ideas which are uniquely the property of the educative process itself.

Like all technologies, therefore, the progress of education is controlled by the discovery and practical utilization of these primary concepts of the contributory sciences. If the latter lag in development, educational technology must lag in its development correspondingly; if educational workers fail to keep pace with discoveries made in the contributory sciences, educational practice also lags by that much.

III

A survey of the use of the scientific method in the study of education since 1900 leaves but little room for doubt that the advance of the study of education has been greatly hampered by both the lack of primary concepts in the contributory sciences and the neglect of basic ones that have been well established.

For example, in physiology, although such primary concepts as "organism" and "integrative action" have been well established throughout most of the past three decades, the general body of educational theory and scientific investigation has failed to make use of them. To give a single example from the study of mental discipline which began at the very moment that the first quantitative studies in education were launched. In 1914, my own synthesis of thirty quantitative studies which had been made of the "transfer" problem since the suggestion of William James in 1890 (studies employing elaborate experimental, measuring, and statistical techniques) revealed an utter lack of awareness of the evidence which had been piled up in the biological sciences concerning the rôles of the integration principle and the generalizing tendency of the organism. I shall recur to this lack of use of the organic conception of human nature and human response in a moment.

Moreover, the study of education was greatly hampered throughout much of its course by the undeveloped character of the primary concepts of psychology, sociology, economics and government, and the arts. In psychology, for example, the workers were rivals of contending fields, each of which asserted the validity of its own official concepts. Witness the insistence of the Behaviorists that mental activity is to be regarded merely as bodily movement—"the conditioned reflex." Contrast with this the contention of the Pragmatists, the Experimentalists, that mental life is essentially "thinking" and that thinking is problem-solving—concepts that are anathema to the Behaviorists.

Put against both of those the insistence of the Psychoanalysts and others that it is purpose, motive, wish, that tie the habits together and enable the individual to adjust properly to the novel situation. Witness the description of the special rôle played by the self-defensive mechanisms—rationalization, compensation, escape, substitution,

projection, and the like—made by the various analytic schools, but not accepted by the others.

Note that the proponents of psychological investigation neglect the creative methods of expression and the attitude and technique of appreciative awareness. Not until these concepts are definitely explored will the rôle of the artist in education be determined.

If we turn to other contributory sciences, especially to the social sciences—sociology and social psychology, government and economics —we note the even more tentative character of the primary concepts. Beginnings have been made in the definition and description of the social character of experience, of the group mind as social interaction, that is, of the "circular response" of individuals. Hints are being registered of the molding influence of "the climate of opinion," and the rôle of social interplay in face-to-face groups in forming the individual. We know something of the twofold nature of the interaction of the individual and the group, of the operation of the stereotype, and hence of the inevitability of the indoctrination of the individual by the social life about him.

The science of government gives us very uncertain definitions of "democracy," of its fundamental assumption of "government by the consent of the governed"; of "freedom" in an interdependent world; of the operation of the mutually inconsistent concepts of conformity and competition.

In the "science" of economics the doctors also disagree. Controversies rage over the nature of the concepts of "laissez-faire" and "social control," and over the implications of unstable units of exchange in an interdependent industrial society.

These meagre examples will illustrate not only the basic concepts of the sciences which contribute to educational technology, but also the necessary lag of the latter.

IV

Where, then, did the intermediaries who, after 1900, took the quantitative method over into education, get their concepts, their points of view, their techniques? *From the physical sciences.* Captivated by the perfection of the quantitative elements in the scientific method, enamored of the precision of measurement achieved in late nineteenth century physical science, and inspired by the aesthetic charm

of the mathematics of probability, these intermediaries between the older sciences and the technology of education threw themselves enthusiastically into the task of making a quantitative description of American education. Working on implied or stated assumptions which we shall note in a moment, they concentrated most of their efforts on measurement and statistical analysis. As a consequence, in thirty years they succeeded in counting and recording the superficial characteristics of American education and in effecting certain reorganizations in its administrative framework.

For example, in an orgy of quantitative tabulation and measurement they collected and classified facts concerning:

a) Child accounting—retardation and elimination; not less than several thousand studies were made following Thorndike's original study of "Elimination of Pupils from School" in 1907.

b) The teaching staff—economic and social background, training, experience, what-not, of the teachers; hundreds of investigations have been made since Coffman's *The Social Composition of the Teaching Population.*

c) Finance—the question-blank analysis of receipts, disbursements, budgets, standardization of accounting forms, what-not, under the leadership of Strayer, Ayres, Mort, and a host of others.

d) Buildings—the systematic analysis of design, materials, costs, all of which led to standardized methods of evaluation and of construction.

e) Pupil attainment in skill and factual knowledge—thousands of studies of attainments within the established school subjects (arithmetic, writing, spelling, what-not)—made under the leadership of Thorndike, Judd, Freeman, Gray, Horn, Courtis, and others.

f) The content of courses of study and of textbooks was tabulated, the present writer contributing his mite.

g) Anthropometrical, mental, and other separated traits of the pupil population—measured and classified by Whipple, Terman, Freeman, Gates, and a host of other educational psychologists.

h) Educational reconstruction via the reorganization of classification, marking, and promoting systems engaged the energies of another army corps of educational scientists.

V

The past thirty years, then, have constituted the initial stage of the development of education as a technology. This period marked the initial use of the elements of scientific method—that is, of observing and collecting facts, of developing and using measuring instruments, of statistically and mathematically classifying data, of setting up controlled experiments, of inference and deduction of law from observed relationships, and thereby of the achieving of new hypotheses.

It was perhaps to be expected, therefore, that much of the initial work would be based upon whatever data, methods of work, and assumptions were at hand, and had the greatest prestige. The most respected concepts and methods were those of the physical sciences and those were taken over. And with them were taken the theory, the outlook on life and education, and the assumptions of the physical scientists.

Every phase of the quarter century of educational investigation illustrates the point—the history of the movement, the problems which were selected for study, the techniques which were employed, and the interpretation of data. Most of the work has either stated or implied four outstanding assumptions:

a) That human nature is mechanism and not organism; that human personality is indeed the sum of all its traits.

b) That "whatever exists, exists in some amount, and can be measured"; that is, that we know a thing only as we can measure and describe it quantitatively.

c) That human traits which are quantitative-qualitative fusions can be reduced to quantitative measures.

d) That certain traits of an organism can be held constant, and changes which are produced in others can be measured by the use of the statistical method of correlation.

This is not an exhaustive list but it indicates the character of the point of view that the students of education took toward human nature, namely, that it was mechanism rather than organism. Nevertheless, careful review of the evidence that has accumulated from forty years of research in the biological sciences leaves no doubt as to the organic, the integrative, character of the structure and the behavior

of human beings. If there is any one principle upon which definite agreement can be obtained among the scientific students of physiology, it is the integrative principle. A chorus of unanimity records that "the individual responds as a whole, totally, not segmentally." Haldane shows, for example, that metabolic activity within the organism is a "whole" activity. Such processes as

> secretion, absorption, growth, nervous excitation, muscular contraction, were treated formerly as if each were an isolable, physical, or chemical process, instead of being what it is. One side of a many-sided metabolic activity of which the different sides are indissolubly associated.

Cannon, Crile, Herrick, Childs, and others all emphasize the totality of the interaction of the organism and the elements of the situation of which the organism and the environment are integrated parts. Childs in his *Physiological Foundations of Behavior* recurs frequently to the "unity and order which constitute the wholeness of the individual organism, a process of integration." The behavior of the organism, he says, "consists of the integrated or coördinated behavior of parts, organs, tissues, cells, and protoplasm." The organism represents a physiological pattern of "organismic behavior." Referring to this organismic character of behavior he says "this consideration of the organism presents of course nothing new but is concerned with facts so familiar as to be almost truisms."

What the scientist has established by his analytic methods the observer notes in everyday life. There is, for example, the integration of posture, meaning, and appropriate attitude in emotional expression: the clenching of the fists, setting of the teeth, and other rigid postures in anger; the collapsing of muscles, trembling of joints, and activating of the running mechanism in fear; the bowed head and correlated facial posture in grief.

I need not multiply illustrations of the established facts of organic behavior. I have taken the liberty of reminding us of these to buttress the case against the great numbers of the quantitative students of education, most of whom have made contrary assumptions of the "mechanical" nature of the personality and of human response. While the bulk of these assumptions is merely implied in the selection, procedure, and interpretation of research problems, others are stated explicitly. This point of view is also illustrated:

a) In the many maze experiments in animal learning which denied "generalization" and pronounced for the specific character of response and the trial and error nature of learning.

b) In the transfer experiments on the spread of learning from one specific function to another. (Note the isolated and narrow character of the functions studied and of the instruments of measurement.)

c) In the enormous amount of scale construction for measurement of products of learning in skill phases of the curriculum.

d) In the use of the same assumptions in the measurement of creative products in the arts as in the measurement of intellectual and sensory-motor skills.

e) In the extended use of the technique of partial correlation which assumed that elements in a total situation can be observed independently of their relations with other elements. This denied a principle which has received widespread acceptance in the established sciences, namely, that "we cannot observe the course of organic entities without disrupting them." Hence many statistical investigations employing this technique must be questioned.

Students of quantitative methods of inquiry must be reminded that the theory held by the investigator determines the nature of the problem which he chooses to study, the organization of the experiment, the choice of procedures, the arrangement of the experimental scene, the methods by which changes are recorded and results are measured, and the interpretation of the data.

a) Recall, for example, the contrast between the functions studied, methods of recording behavior, including measurement and the interpretation of findings, in the animal learning experiments of the Behavior and Gestalt schools.

b) Recall the similar contrast in the transfer studies of the specific educationalists, and those of the generalization school: *viz.*, the controlling influence of the theories held by each side as revealed in the specific versus the general nature of the functions selected for study, in the arrangement of the experimental stage, in the units employed in measuring, and in the interpretation of the data.

VI

But the study of the bases of the scientific movement carries us even deeper than the psychological point of view of the measurers. It calls up the question of the rôle of their educational and philosophic outlook. Most of them, at least certainly throughout the first quarter century, assumed a kind of education which in our day is increasingly being discarded as unsound. They assumed or implied that industrial civilization as it had developed in Great Britain, France, Germany, Japan, and the United States—especially on the basis of private-capitalism, laissez-faire, and the rights and immunities of the individual—was essentially sound. Correspondingly, they assumed the soundness of the kind of education that had been set up in those countries. This latter assumption was that "education" was something:

a) That went on in a schoolhouse five hours a day, a hundred and ninety days a year, and was more or less isolated from the social-economic life of the community.
b) That one did before entering "life."
c) That one did with words and other abstract symbols, and with sensory-motor skills.

Correspondingly, the curriculum was a "given" body of skills, facts, and principles; education consisted in "learning" these by the methods most approved by the results of experimental studies. That these assumptions were implicit in most of the scientific work of the last quarter century is revealed by the fact that:

a) The experiments in learning and in curriculum reorganization were largely carried on within the framework of specific school subjects. There was little or no questioning of these subjects.
b) The outcomes of education were stated in terms of specific skills and items of knowledge which were acquired within the subjects (for example, arithmetical, handwriting, and spelling skills, the facts of location, the time facts of geography and history, and the facts of the physical and natural sciences).
c) Tests and scales were designed definitely in terms of these "subject-matter-set-out-to-be-learned" outcomes.

d) A widespread tendency existed among the quantitative workers not to state explicitly the assumptions and other backgrounds of their work.

e) Many of the leaders took no part in the critical discussion of educational theory; in conspicuous instances they refused to include such critical discussions of theory in the offerings of graduate schools of education.

f) Their preponderant emphasis was upon the study of administrative problems of rearrangement. As a single illustration note the assumption underlying scores of investigations of the relation between school efficiency and size of class; namely, that specific skills and items of factual knowledge are the real outcomes sought in school instruction.

g) The quantitative workers in education carried on, aside from "intelligence," very little measurement of such generalized traits as the powers of organizing material, of organizing people, of taking part in group activities, of appreciations, of general insights, and the like.

VII

Assuming private capitalism, rugged individualism, and competition, the leaders of the mass-school carried the competitive climate into education as well as into family and neighborhood life and economic and social organization in general. Perhaps in the First Industrial Revolution it was inevitable that such an all-pervasive criterion of life and progress should have been implicitly adopted in the school.

But, pervading the work of the school, it was taken over explicitly into the quantitative movement in education by the almost universal adoption of the "rank-order method" of measuring every aspect of school administration and procedure. General excellence in school administration was measured by comparing one school system with another school system, one school with another school, one class with another class, one teacher with another teacher, one child with another child. Attainments, traits, abilities, and growth of human beings—as well as the attributes of school buildings, the educational budget, the allotment of the daily time schedule, the distribution of emphasis in the curriculum—all were measured by comparison with outside norms. Thus the measure of the product or the growth of

one individual was assumed to be those of other individuals, rather than his own capacity for production or growth. I am confident that the widespread use of this external norm of measurement has contributed to the setting of false standards within the school as well as to the enhancement of the lack of integrity in the individual and to the development of a climate of hypocrisy in the social order.

VIII

As space is limited, we cannot multiply illustrations. These seem to me to be the major assumptions on which three decades of scientific work has been done in education.

My whole position can be summed up briefly. First: in the initial stage of the movement, the quantitative workers (including the present writer) have concentrated most of their critical study upon determining and increasing the *reliability*, that is, the *objectivity*, of their facts; witness the large amount of effort devoted to the statistical determination of the reliability of scales and tests, to the "correction" of statistical measures for "attenuation," what-not. Second: they have displayed a much more meagre interest in the *validity* of their facts—that is, in determining whether their scales and tests measured what they purported to measure. We note, therefore, the smaller amount of interest and effort devoted to the study of validity than to that of reliability. Third: the quantitative workers have devoted almost no effort at all to the questions of value, theory, philosophy—that is, to the question: "What *is* fact?" Scientific inquiry has been assumed to consist essentially of the process of reducing error by buttressing quantitative measures.

Thus the question "What is fact?" as implied in a quarter century of work by the quantitative workers is answered by the assumption of a theory of measurement which admits of only one mode of clarifying thought and only one point of view in interpretation. The endeavor of the worker in educational science as in mechanical technology has been devoted to increasing the accuracy of observations either by: (*a*) improving the precision of the instrument of observation; (*b*) improving the skill of the observer; or (*c*) increasing the accuracy of interpretation by multiplying observations or by the use of the statistics of probability (frequently inapplicable).

Because, therefore, of this preponderant fixation of attention and

interest upon the reduction of error there has been a general tendency to ignore other ways of clarifying thought and solving problems. This is what Professor Raup calls the method of "adequacy in the milieu in human values." The rôle of preference for established stereotyped attitudes, points of view, beliefs and convictions is known to be very great. Yet it has been essentially relegated to the background by the scientific workers. There has been little tendency to enlarge the realm of discussion by letting in many "milieus of interpretation" on their merits.

To put the case differently, this yearning for salvation via statistics has led to a vast neglect of the process of interpretation. As Professor Bode has phrased it recently, the

> neglect of interpretation is likely to mean in practice a confusion of data and interpretation . . . the neglect of interpretation is likely to develop a tendency or perhaps even an incapacity to distinguish between data and assumption. It is hardly necessary to insist that the disposition to claim scientific warrant for our assumptions, simply because they happen to be linked up with a set of figures, is a real menace, and in bringing discredit on scientific work, is likely to strengthen the hold of tradition and lazy routine on our schools.

IX

This, then, is my preface to the study of the major concepts and assumptions of three decades of scientific work. No other task of critique exceeds this one in importance in these drastic transition years through which we are now passing. Especially at this moment is it important that scientific workers in education shall confront the necessity of critically reconsidering the primary foundations of their technology. I am convinced that the assumptions stated in these pages are all being called in question, both by the cumulation of social trend and by the more objective establishment of new primary concepts from the contributory sciences.

It is perfectly clear that the scientific method has an important contribution to make to the improvement of education. It will do so by forcing a reconsideration of educational aims as well as by aiding the reconstruction of administration. The increasing utilization of scientific method in education is a fact of much importance. Certainly we shall keep the scientific method. But increasingly in the years ahead we shall discover its place and keep it there.

Improving the Ability to Read*

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IMPROVEMENTS IN MEANS OF INCREASING ABILITY TO READ

THE regular "Readers" used in Grades 4 to 9 should be more than collections of material suitable for the grade in question to read. They should also be instruments for such training in the appreciation of literature as is appropriate, or instruments for developing the ability to read by ingenious exercises to give mastery of important knowledge, habits, and skills, and to prevent practice in error. There might well be distinct instruments for these two aims. Series aiming to be a course in literature for Grades 4 to 9 are available, but a satisfactory series of exercises to give specific help in reading in these grades is yet to be devised.

Supplementary Reading

There is an enormous supply of material written for children, of material rewritten for children, and of "good" reading modified in various ways to make it more comprehensible and interesting. For the top quarter or third in intelligence and ability to read this supply is a gold mine. All that is necessary is to make it available and to let the children know what sort of content each book contains and how hard reading it is. An approximate rating for difficulty of reading can be made by (1) a word count for each book reporting how many different words it contains that are in 2501 to 5000, 5001 to 7500 (or 7262), 7501 (or 7263) to 10,000, and outside the 10,000 of the *Teacher's Word Book*, and (2) a rating for simplicity of sentence structure and freedom from subtleties and rarities of construction.

For the majority of pupils, however, the supplementary reading must be used with much caution and discrimination. Suppose, for

* Part I of this article on improving the ability to read appeared in the October Record.

example, we are making recommendations to these pupils in Grade 4. Many of the books are too hard in respect of vocabulary. These pupils will meet two or three words per page that baffle them. They are not able to make a satisfactory guess from the context, and must use a dictionary or glossary, or dictionary and glossary, or suffer frustration. The reading is then work rather than play. At the beginning of Grade 4, the mere mechanics of reading words which they know as sounds is for them almost hard enough to prevent enjoy-

TABLE I

The Number of Different Words outside the Most Used 2500, Classified according to Their Frequency and Range of Occurrence as Measured by Their Position in the Thorndike 10,000, in Samples of 40,000 or 20,000 Words from Eight Books Recommended for Grade 4.

Names of persons and places outside the Thorndike 10,000 are not included.

	2501 to 3000	3001 to 3500	3501 to 4000	4001 to 4500	4501 to 5000	5001 to 7262	7263 to 10,000	Outside the 10,000
Samples of 40,000 words each:								
The Prince and His Ants ..... L. Bertelli	141	133	102	92	82	185	136	176
The Story of Glass ..... S. W. Bassett	177	142	102	92	123	259	207	272
The Wonderful Adventures of Nils ..... S. Lagerlöf	152	101	79	77	69	180	158	230
Samples of 20,000 words each:								
Johnny Blossom ..... O. Zwilgmeyer	65	66	33	55	42	94	69	142
Pioneers of America ..... Blaisdell and Ball	91	84	57	47	55	111	86	97
Stories of Starland ..... M. Proctor	83	60	45	50	41	90	63	72
The Boy Who Knew What the Birds Said ..... P. Colum	57	33	26	28	26	49	26	72
Wonders of the Jungle ..... S. Ghosh	36	27	17	15	20	32	24	39

ment. Two or three frustrations per page from unintelligible words may make the difference between enjoyment and discomfort. For example, consider eight books taken at random from those recommended for use in Grade 4 by Terman and Lima, as reading for children who are in the bottom third for ability to read, and also for those children who are in the middle third. The former are able to get the meanings of from 2000 to 3500 words from seeing them. The latter are able to do the same for from 3500 words to 4500 words. Table I presents the results of counts of the first 40,000 words (or of the first 20,000 in case the book does not contain 40,000) for each of the eight books.

Limitations of time and money have prevented me from making these counts (of Table I and later tables) in as much detail as is desirable. What has been done is as follows:

Words listed in the first 2500 for importance in the Teacher's Word List of 10,000 were first eliminated. These will be taken care of so far as needed in Grades 4 to 9 by any system of reading no matter how bad.

Every other word was listed except compounds made from the first 2500 and nearly or quite self-explanatory. Those that were within 2501 to 10,000 of the Teacher's Word List were counted (plurals, verb forms in *s, ing, d,* and *ed*, adjectives formed from proper nouns by adding *n*, adverbs formed by adding *ly*, comparatives in *er* and superlatives in *est*, and some past participles formed by adding *n* to preterits being counted under the primary form entered in the Word List). Words which are spelled alike are counted together even though they are etymologically different words. This is a vicious procedure, but to do otherwise would have made the expense prohibitive.

In the case of most of these books, each word in the least important 7500 of the Thorndike 10,000 was also allocated to its proper class in the Thorndike list as follows:

Grade 3B words from 2501 to 3000
Grade 4A words from 3001 to 3500
Grade 4B words from 3501 to 4000
Grade 5A words from 4001 to 4500
Grade 5B words from 4501 to 5000

Words of credit	10	not included in 5B,	5001 to	5144
Words of credit	9	not included in 5B,	5145 to	5544
Words of credit	8	not included in 5B,	5545 to	6047
Words of credit	7	not included in 5B,	6048 to	6618
Words of credit	6	not included in 5B,	6619 to	7262
Words of credit	5	not included in 5B,	7263 to	8145
Words of credit	4	not included in 5B,	8146 to	9190
Words of credit	3	not included in 5B,	9191 to	10,000

Words that were outside the Thorndike 10,000 were listed in three categories: proper names, compounds, all others.

Table II reports the probable number of frustrations per page of 200 words by lack of knowledge of meanings in the case of pupils who know 2500 words, 3000 words, 3500 words, 4000 words, and 4500 words, respectively, for each of the eight books.

Six of these books have too wide a vocabulary for any fourth-grade pupils below the top third in reading ability. Even if we make a generous allowance for the presence of easy derivatives, aid from the context, and skill in the authors in selecting words lack of knowledge of which will do a minimum of harm to enjoyment of the facts or story, the pupil who knows 4000 words or less will be frustrated too often. The other two are suitable in vocabulary except for the least able third during the first half-year.

An examination of books for supplementary reading will show also that many of the books which are suitable or nearly suitable in vocabulary are too childish in content for the boys and girls of 11 and 12 who make up a large part of the duller two-thirds in Grade 4. The interests of boys in adventure, boyish affairs, mechanical devices, and the exploits of heroes develop nearly as early in the dull as in the bright. So do the interests of girls in home life, girls' thoughts and conversation, dress, the romance of heroes and the triumphs of a heroine. Supplementary reading for the lower half or two-thirds of the class is likely to be too hard in vocabulary or too childish in context.

This difficulty continues throughout Grades 5 and 6 (and with some pupils later). At the beginning of Grade 5, for example, the knowledge of words possessed by the lower two-thirds varies from about 4000 to about 6000 (not counting separately plurals, verb forms in *s*, *ed*, or *ing*, comparatives, superlatives, or adverbs in *ly*).

TABLE II*

Estimated Frequencies of Unknown Words per Page of 200 Words for Pupils of Various Degrees of Reading Ability, in the case of Eight Books Recommended by Terman and Lima for Grade 4.

Names of persons and places outside the Thorndike 10,000 are not included.

	2500-Word Pupil	3000-Word Pupil	3500-Word Pupil	4000-Word Pupil	4500-Word Pupil
The Prince and His Ants	6	4½	4	3½	3
The Story of Glass	7	6	5	5	4½
The Wonderful Adventures of Nils	6	4½	4	3½	3
Johnny Blossom	6	5	4½	4	3½
Pioneers of America	7	5½	4½	4	3½
Stories of Starland	5½	4½	3½	3	3
The Boy Who Knew What the Birds Said	4	2½	2½	2	2
Wonders of the Jungle	3	2	1½	1½	1

A count of 40,000 words (or 20,000 if the book does not contain 40,000) from each of twenty-three books recommended for supplementary reading in Grade 5 by Terman and Lima shows the facts of Tables III and IV.

The easiest of these books will have one unknown word per hundred for the 4000-word pupil, which is a reasonable load, though one in two hundred is a better guarantee of reading for pleasure. But most of them will have three or more unknowns per page of two hundred words and some will have one every thirty words. If the

* In computing the estimates of Table II, we reckon the distribution of the words known by the 2500-word pupil, 3000-word pupil, etc., by the scheme shown below. Any reasonable distribution will produce closely the same results in Table II.

Distribution Scheme of Percentages Known in Various Divisions of the Thorndike 10,000-Word List by Pupils Knowing 2500, 3000, 3500, etc., Words.

	1 to 2500	2501 to 3000	3001 to 3500	3501 to 4000	4001 to 4500	4501 to 5000	5001 to 7500	7501 to 10,000	Outside the 10,000
2500-word pupil ..	90	30	10	10	0	0	0	0	0
3000-word pupil ..	100	70	10	10	10	0	0	0	0
3500-word pupil ..	100	90	70	20	10	10	0	0	0
4000-word pupil ..	100	100	80	60	30	15	3	0	0
4500-word pupil ..	100	100	90	70	50	30	10	2	0
5000-word pupil ..	100	100	100	90	70	50	15	3	0

TABLE IIIA

The Vocabulary Load of Representative Books Recommended by Terman and Lima for Pupils in Grade 5.

Approximately 40,000 words are counted in each book.

Author and Title	2501 to 5000	5001 to 7262	7263 to 10,000	2501 to 10,000	Outside the 10,000	
					Not Proper Names	Proper Names
Recommended for Grade 5						
Clark G. Glenwood						
Tiny Toilers and Their Work	534	223	184	941	461	22
Fabre, J. H.						
Field, Forest and Farm	387	189	188	764	364	12
The Storybook of Science	689	292	254	1235	488	29
The Wonders of Instinct					1135	70
Faris, John T.						
Real Stories from Our History	761	328	268	1357	440	256
Olcott, Frances J.						
Good Stories for Great Holidays ...				1604	353	172
Pyle, Howard						
Merry Adventures of Robin Hood ..	481	210	141	832	297	61
Story of King Arthur and His Knights	451	188	131	770	273	63
Readings in United States History, edited by C. L. Barstow						
The Civil War	704	310	275	1289	522	248
The Colonists and the Revolution ..					578	353
Explorers and Settlers	850	345	266	1461	501	351
The Progress of a United People ...	754	376	324	1454	782	229
The Westward Movement	721	327	257	1305	580	257
Tappan, Eva M.						
Robin Hood, His Book	342	122	98	562	187	23

4000-word pupil learned the meanings of all the new words in one average book of this list, he would learn as many as he would normally learn from all his reading in three months! Even a 6000-word pupil will find considerable difficulty in reading the majority of these books. If we reckon that the 6000-word pupil knows all the words in the first four thousands of the Thorndike 10,000, 85 per cent of

TABLE IIIB

The same as Table IIIA, but for Samples of 20,000 Words

Author and Title	2501 to 5000	5001 to 7262	7263 to 10,000	2501 to 10,000	Outside the 10,000	
					Not Proper Names	Proper Names
Aanrud, Hans						
Lisbeth Longfrock	306	106	72	484	134	27
Blaisdell, A. F., and Ball, F. K.						
English History Story Book	219	74	44	337	36	52
Bryant, L. M.						
The Children's Book of Celebrated Pictures	221	73	58	352	74	127
The Children's Book of Celebrated Sculpture	281	99	80	460		
Crommelin, Eveline						
Famous Legends	328	92	63	483	79	86
Seton, Ernest Thompson						
Biography of a Grizzly	245	87	89	421	173	21
Tappan, Eva M.						
Story of Our Constitution	212	84	68	364	146	34

the fifth thousand, 40 per cent of the next 2500, 6 per cent of the last 2500, and none outside the 10,000, the number of unknown words per thousand running words in each book is as shown in Table IV.[1] The 6000-word child will often have intelligence, linguistic ability, knowledge, and freedom from attention to the mechanics of reading sufficient to enable him to solve the difficulty or enjoy the reading in spite of leaving it unsolved. Typical supplementary reading recommended for Grade 5 is well adapted to the top fourth of pupils, and possibly for the next fourth. But for the lower half selection must be made from less taxing books. The less taxing books are likely to be found among the modified books and famous stories retold. In the latter case there is danger that the pupil will get the exploits of Robin Hood, Launcelot, Siegfried, and other stock tales *ad nauseam*.

In the case of any book to be used either as a regular text or as

[1] Any reasonable reckoning will give closely similar results.

TABLE IV

Estimated Frequencies of Unknown Words per 1000 Words (about 4 pages of the ordinary book for Grade 5) for Pupils of Various Degrees of Reading Ability, in the case of Books Recommended by Terman and Lima for Grade 5. Names of persons and places outside the Thorndike 10,000 are not included.

	4000-Word Pupil	5000-Word Pupil	6000-Word Pupil
40,000 word samples			
Tiny Toilers	27	25	20
Field, Forest and Farm	22	19	16
Storybook of Science	32	27	23
Wonders of Instinct			
Real Stories from Our History	33	28	23
Good Stories for Great Holidays	33*	27*	22*
Merry Adventures of Robin Hood	21	17	15
Story of King Arthur and His Knights	19	16	13
Robin Hood, His Book	13	11	9
The Civil War	35	29	23
The Colonists and the Revolution			
Explorers and Settlers	36	30	25
The Progress of a United People	44	39	34
The Westward Movement	36	31	26
20,000 word samples			
Lisbeth Longfrock	21	17	14
English History Story Book	10	8½	6½
The Children's Book of Celebrated Pictures	14	11	9
The Children's Book of Celebrated Sculpture	18	14	11
Famous Legends	17	13	10
Biography of a Grizzly	22	19	16
Story of Our Constitution	19	16	14

* Estimated from the fact that the total number of different words 2501 to 10,000 was 1604.

supplementary reading it is important to have information of the nature of its content and the difficulty of its vocabulary. The former can be obtained fairly easily by a quick reading of the book, but the latter should be based on a sampling of at least 10,000 words, taking, say, lines 1 to 5 from each page or pages 5, 10, 15, 20, 25, etc. A sampling of 20,000 will, of course, be much better. It is unsafe to estimate from only 5, or even 10, per cent of a book which is so short as many of those recommended for Grades 3 to 6.

TABLE V

The Vocabulary Load of Representative Books Recommended by Terman and Lima for Grades 6, 7, and 8.

Samples of 40,000 words.

	2501 to 5000	5001 to 7262	7263 to 10,000	2501 to 10,000	Outside the 10,000	
					Except Proper Names	Proper Names
Recommended for Grade 6						
Baldwin, James						
Story of the Golden Age	561	204	152	917	160	144
Story of Siegfried	807	332	273	1412	274	96
Bennett, John						
Master Skylark	632	302	234	1168	900	183
Burroughs, John						
Squirrels and Other Fur-Bearers	602	234	229	1065	451	7
Fabre, J. H.						
Wonder Book of Chemistry	553	217	170	940	396	7
Haggard, Rider						
Lysbeth	686	275	202	1163	485	61
Knipe, E. B., and A. A.						
The Lucky Sixpence	522	202	145	869	299	44
Long, W. J.						
Ways of Wood Folk	620	221	176	1017	320	25
Wood Folk at School and Wood Folk at Home	566	229	170	965	285	38
Meiklejohn, Nannie						
The Cart of Many Colors						
Nicolay, Helen						
Boy's Life of Abraham Lincoln	733	258	235	1226	352	88
Pyle, Howard						
Men of Iron	643	293	226	1162	487	58
Seton, Ernest Thompson						
Wild Animals at Home					527	73
Wilmot-Buxton, E. M.						
Stories of Norse Heroes	635	219	144	998	250	94
Zwilgmeyer, Dikken						
What Happened to Inger Johanne	574	183	155	912	344	111

TABLE V—*Continued*

	2501 to 5000	5001 to 7262	7263 to 10,000	2501 to 10,000	Outside the 10,000	
					Except Proper Names	Proper Names
Recommended for Grade 7						
Bond, A. Russell						
Scientific American Boy	436	184	150	770	338	32
Bostock, F. A.						
Training of Wild Animals	529	220	230	979	385	30
Gilbert, Ariadne						
More Than Conquerors	973	413	345	1731	490	185
Hagedorn, Hermann						
Boy's Life of Theodore Roosevelt ..						
Hawkes, Clarence						
Tenants of the Trees						
Trails to Woods and Waters	650	254	233	1137	489	25
Ingersoll, Ernest						
Wild Neighbors	890	389	379	1650	975	163
Masefield, John						
Martin Hyde, the Duke's Messenger	532	220	147	899	409	73
Mitton, G. E.						
Book of Stars for Young People ...	414	159	133	706	230	57
Parkman, Mary I.						
Heroines of Service	870	361	301	1532	596	133
Sharp, Dallas L.						
Beyond the Pasture Bars					319	26
Recommended for Grade 8						
Forman, S. E.						
Stories of Useful Inventions						
Fraser, Chelsea C.						
Secrets of the Earth	763	341	287	1391	710	157
The Young Citizen's Own Book ...						
Gayley, C. M.						
Classic Myths in English Literature and Art	648	251	164	1063		
Hawksworth, Hallam						
Adventures of a Grain of Dust	650	268	224	1142	531	113
The Strange Adventures of a Pebble.						

TABLE V—*Continued*

	2501 to 5000	5001 to 7262	7263 to 10,000	2501 to 10,000	Outside the 10,000	
					Except Proper Names	Proper Names
Recommended for Grade 8—Continued						
Pyle, Howard						
Story of Sir Launcelot	389	148	88	625	227	45
Story of the Champions of the Round Table				705	231	57
Story of the Grail	416	151	114	681	194	66
Riis, Jacob						
Making of an American				1386	448	126
Roosevelt, T. R., and Lodge, H. C.						
Hero Tales from American History.				1160	458	276
Tappan, E. M.						
In the Days of Queen Elizabeth	648	255	168	1071	258	58
In the Days of William the Conqueror	599	240	168	1007	254	75
Van Loon, Hendrik W.						
Story of Mankind	497	216	186	899	336	258
Yonge, Charlotte M.						
Dove in the Eagle's Nest	923	413	310	1646		

Table V contains facts concerning the vocabulary load of certain books recommended for Grades 6, 7, and 8 by Terman and Lima, together with the facts for certain other books for the sake of comparison. Tables I, III, and V will help teachers to select the most suitable, or least unsuitable, books for supplementary reading for pupils of different levels of ability.[2] I hope others will be encouraged to make similar counts. Subjective opinions concerning the vocabulary load of any book for children are subject to enormous errors. Even the most expert teachers, writers, and editors are incompetent to make such estimates. Otherwise we should not have the great variation in vocabulary among books intended or recommended for the same level of ability in reading. If the authors had known, they would have changed some of these books. If the editors had known,

[2] I am glad to acknowledge help from the Emergency Work Bureau and from the Civil Works Service Bureau of the Civil Works Administration in part of this work.

they would have suggested changes. If Terman and Lima and the teachers whom they consulted had known, they would have made different recommendations.

The facts of Tables III, IV, and V are important from many points of view, but for our present purposes their chief significance is in showing that the books recommended for Grades 5 and 6 seem to be nearly as hard in respect of vocabulary as those recommended for Grades 7 and 8, and that the vocabulary load is so heavy that few pupils among the lower two-thirds in Grades 5 and 6 could read the recommended books for pleasure. The authors of these books probably had in mind the abler third of children. Even so, they were, with few exceptions, either insensitive to the difficulty of words or neglectful of it.

The lowest level of difficulty in vocabulary found in the books for Grades 4 to 8 which I have examined is approximately:

50 outside the most used 10,000 words	in a sample of 20,000
125 outside the most used 5000 words	
250 outside the most used 5000 words	

This level is found in simple tales and descriptions which by design or accident use a minimum vocabulary. With it may be contrasted the status of random samplings of enough pages from the *Encyclopedia Britannica* to make a total of 20,000 words. For such we find approximately:

675 outside the most used 10,000
1250 outside the most used 5000
1850 outside the most used 2500

Proper names outside the 10,000 are excluded in both cases.

Ordinarily a 40,000-word sample from the same book will not contain twice as many words outside the 10,000, or 5000, or 2500 as either half of it, since certain words reappear. But in the very simple tales and descriptions such reappearances are mostly within the words 1–2500. Samples of 40,000 may then be expected to vary (proper names being excluded) from approximately:

100 outside the most used 10,000 words	in tales simply told
125 outside the most used 5000 words	
250 outside the most used 2500 words	

to approximately:

1250 outside the most used 10,000 words
2200 outside the most used 5000 words
3300 outside the most used 2500 words
} in serious books for scholarly adults

With the aid of Tables I to V and extensions thereof school authorities can choose supplementary reading for various levels more effectively than hitherto, but even if all available books were thus

TABLE VA

Same as Table V, but for Samples of 20,000 Words

	2501 to 5000	5001 to 7262	7263 to 10,000	2501 to 10,000	Outside the 10,000	
					Except Proper Names	Proper Names
Recommended for Grade 6						
Burroughs, John						
Bird Stories from Burroughs	444	189	159	792	360	12
Gaines, Ruth						
Treasure Flower	440	168	125	733	255	52
Richards, Laura E.						
Florence Nightingale, the Angel of the Crimea	417	161	122	690	190	85
Recommended for Grade 7						
Dole, C. F.						
The Young Citizen	293	102	96	491	112	37
Fairbanks, H. W.						
Stories of Our Mother Earth				362	75	30
Hawkes, Clarence						
Tenants of the Trees	455	165	135	755	279	17
Scholes, P. A.						
Second Book of the Great Musicians	317	146	80	543	177	173
Recommended for Grade 8						
Bragg, Sir William						
World of Sound	387	142	143	672	310	38
Muir, John						
Boyhood of a Naturalist	546	186	148	880	360	14

analyzed the fundamental difficulty would probably remain. There simply are not enough books satisfactory in both content and vocabulary to provide wide reading for pleasure by the lower half of pupils in Grades 4, 5, and 6.

GLOSSARIES AND DICTIONARIES

Glossaries in books for Grades 4 to 9 might well be constructed by some systematic plan, such as, for example, to include all words not in the first 10,000 of the Thorndike 20,000 list plus any others which the writer or editor thought might offer difficulty. It might also be useful to state not only the special meaning or meanings needed for that book, but also the other important meanings of the word.

The use of glossaries is evidence of the great need of improvement in dictionaries for use by children. The better the dictionary is, the less desirable it is to have separate glossaries. Many of the definitions in elementary-school dictionaries are incomprehensible by a large percentage of those children who will look up the word in question. Consider, for example, the six words below and their definitions. These are taken almost at random from the sixth thousand and would be looked up by children of about mental age 10. Would they be much helped?

academy: *n.* 1. A school ranking between a common school and a college. 2. A society of learned men united for the advancement of art or science.

academy: *n.* A private school or seminary for the teaching of the higher branches of education; a school for instruction in special subjects; an association or society of men famous in literature, science, and art; a building devoted to educational purposes.

acceptance: *n.* 1. Act of accepting; esp., favorable reception; approval; acceptableness. 2. An accepted bill of exchange.

acceptance: *n.* The act of taking what is offered; a receiving with approval; agreement to pay a note, or bill of exchange.

accommodation: *n.* 1. Act of accommodating; state of being accommodated; adaptation; adjustment. 2. Willingness to accommodate. 3. Whatever supplies a want or affords ease, refreshment, or convenience; often in *pl.* lodgings and food. 4. Adjustment of differences. 5. A loan of money or credit.

accommodation: *n.* Adaptation or adjustment; that which supplies a want or desire; lodging; a loan of money, as a favor: accommodation paper, notes, or bills of exchange, not actual sales.

accusation: *n.* 1. Act or fact of being accused. 2. That of which one is accused.

accusation: *n.* A charge of wrongdoing; a declaration of the commission of a crime or error.

acid: *a.* 1. Sour, sharp, or biting to the taste; tart; also sour-tempered. 2. Of, pertaining to or of the nature of, an acid. Syn. See *Sour. n.* A sour substance; a substance typically soluble in water and sour in taste; a chemical compound containing hydrogen capable of uniting with a base to form a salt.

acid: *adj.* Sour, and sharp or biting to the taste, as vinegar: *n.* A sour substance, usually liquid; in chemistry, that which combines with a base to form a salt.

adjust: *v.t.* 1. To settle, arrange, or harmonize (differences, contradictions, disagreements, accounts, etc.) 2. To make exact; fit, as one thing to another. 3. To put in order; regulate.

adjust: *v.t.* To fit, or make exact; to make similar; to make accurate; to settle or bring to a satisfactory state; as, to *adjust* accounts.

THE IMPROVEMENT OF THE SCHOOL DICTIONARY

The dictionary is one of the most important instruments of instruction. It offers an enormous store of systematized knowledge, more or less of which is useful to every pupil. We can hardly realize the saving of time and errors made by this great invention of past scholarship. Still less, perhaps, do we realize that a dictionary ranks high in satisfying two ideals of our most modern theory of education, namely, that the instruction given be in response to a real need felt at the time, and that the pupil be taught to do something which would be a reasonable thing to do in the real world. A pupil uses a dictionary when he really wants to know the meaning or pronunciation or spelling of a word. He can do just what would be the reasonable thing to do in a similar case in the real world outside of school.

School dictionaries are also in some respects greater sinners against psychology and pedagogy than any other instruments of instruction. So, both because of their values and their vices, their improvement should be one main task of educational science.

A great dictionary is a masterpiece of science and scholarship, and also of system and organization, condensing the experiences of millions of hours of reading into pithy epitomes and apt illustrations of a word's meanings. It is a treasure house of conveniently arranged information for an educated adult. The school dictionary, which is made out of it or adapted from it, valuable as it is, does not perform

anything like a corresponding service for the twelve-year-old pupil. The reasons for this comparative failure are instructive. One is, that the child's book is made too small. It is a general tendency in the adaptation of books for school use to shrink them up. A history of the United States in four thousand pages is cut to four hundred; a hundred thousand word discussion of heat or light or electricity or wages or banking is made into a chapter of five thousand words. Reducing the number of facts and principles to be taught is certainly desirable. But it will usually require many more words and pictures and diagrams to teach the same fact or principle to the unmature and untrained and uninformed pupil, perhaps four times as many. If dictionaries for twelve-year-olds are to be as they are, about one-fourth the size of dictionaries for adults, we should then need to reduce the number of facts presented to about one-sixteenth as many as are in the large dictionary. No such proportionate reduction is made.

The custom of making small books for small pupils shows its irrational associations beautifully in the case of the type. This, too, is small, so small that it would be tolerated in no school textbook save a dictionary, though the work of looking up words and learning their meanings is such as should be relieved of all unnecessary strain.

The reductions by omitting words altogether are in general suitable, just as in the adaptation of college books to the lower schools the omissions of entire topics are usually reasonable. The reductions by omitting certain of the rarer meanings of a word are less so, and the reductions by condensing the treatment of any one meaning are often very unreasonable.

This indeed is where so many of the makers of schoolbooks have disregarded the laws of psychology and teaching. They keep a general fact or principle, omitting or reducing the explanations and illustrations of it, and the fact or principle hereby becomes incomprehensible to children. They keep a man's name and the bare fact of his chief activity, but omit all the details about him and it which enable a pupil to make him and it real and vivid and fix them together in memory. In the case of the dictionaries, they omit the pictures and illustrative sentences containing the word, leaving the bare definitions, though the child needs the picture and illustrative sentence more than the adult, and needs two or three of them where one would

serve for the adult. The treatment of any one word-meaning in a large dictionary is already condensed to the limit of comprehensibility. The modifications which are needed in adapting the treatment to children are all in the way of expansion by repetition, illustration, and the replacement of unintelligible characterizations and definitions by simple cases of actual use where the context teaches the meaning.

Consider the following case. The common school dictionary has:

battlement: an indented parapet surmounting a wall.

If we turn to *indented*, we find:

indent: to notch; to bend out by indenture or contract; to begin (a line of print) further in from the margin than the rest of the paragraph. To be notched; to crook or turn; to wind in or out.

If we turn to *parapet*, we find:

parapet: wall or rampart covering soldiers from attack; breastwork; low wall protecting the edge of a bridge, quay, etc.

If we turn to *surmount*, we find:

surmount: to rise above or higher than; to surpass; or subdue.

The pupil probably would be so discouraged by the unintelligible indented parapet surmounting a wall that he would give up the chase.

Now why do we have this cryptic definition when a picture of a battlement is so much the better way to teach a child what the word means? Let us turn to the next larger sized dictionary of the same author. We there find:

battlement: a parapet, with open spaces, at the top of ancient fortified buildings, later used as a decorative feature.

In the main dictionary we find: *a parapet, consisting of alternate solids and open spaces, surmounting the walls of ancient fortified buildings. At first purely a military feature. Afterwards copied on a smaller scale with decorative features, as for churches,*—accompanied by a picture.

The process of modification as shown here is typical of the errors which the scholar makes in presenting facts to children. He does not fully consider the mind of the learner or the response he wishes to produce. If he had, he would have saved the picture rather than

any of the text, and would have simplified, improved, and properly labeled it.

He was not careful rigorously to avoid defining what he is trying to teach by something still harder to learn; and he was possessed by a passion for adaptation to children *via* abbreviation. Otherwise, he would not have wavered between *at the top of* and *surmounting* and would not have replaced *consisting of alternate solids and open spaces* by *indented.*

Sometimes the passion for brevity results in a statement which tells almost or quite nothing which would be of any interest or helpfulness to a pupil. For example, suppose that a pupil in the backwoods reads *banana* and does not know what it means and looks in the dictionary and finds:

banana: a species of plantain tree, and its edible fruit.

His last state is probably worse than his first. This is the adaptation of the following:

banana: a perennial herbaceous plant native of all tropical countries; also its edible fruit. The banana has a soft herbaceous stalk similar to a tree trunk with very large simple leaves. The flowers are enveloped in colored bracts, the whole flower cluster forming a large pendent bunch. The fruit is five or six inches long and more than an inch in diameter. The pulp is soft and luscious, seedless through long cultivation. It is eaten either raw or cooked. Hundreds of named varieties exist, but those exported to northern markets are of two types, the yellow and the red. See plantain, dwarf banana.

The definition is accompanied by a picture.

The description, *five or six inches long, soft, seedless, eaten raw, yellow and red, growing in tropical countries,* which might be made into intelligible items to give at least a partial knowledge of a banana (needless to say the fruit, not the tree, should be primary in a child's dictionary) are all discarded. What the definition given does contain for the child, that a banana is a kind of tree and fruit, is obscured by *species of plantain.*

Another common error of the scholar is to confuse two meanings of true and to underestimate one kind of truth for children. A true statement may be one which cannot mislead you if you understand it, or it may be one which will not mislead the person to whom it is made.

Compare, for example, these two definitions of candle.

A

candle: A cylinder of combustible substance inclosing a wick to furnish light.

B

candle: A piece of wax or tallow with a wick, which gives a light when it burns is a candle. When people do not have gas or electric light, they use lamps and candles.

A is the dictionary maker's definition, and is the truer in the former sense, but B is probably truer in the latter sense for children ten to fifteen years old. They would probably get more truth and less error from B than from A.

The use of pictures in dictionaries also illustrates a general error of textbook makers. They often write the words, leaving the pictures to be designed by an illustrator, who is often rather a decorator. They may even permit him to choose what matter shall be illustrated. Thus we have in arithmetic more or less attractive pictures of children, grocery stores, and such like, which could almost as well be in a geography book. In dictionaries we have whole pages of flags, or birds, or ships, added as a sort of decorative bonus, but find no picture of an eagle where the word is, nor of a schooner where the word is. There are far too few simple line sketches and diagrams, and the pictures in general are decorations or additions rather than organic parts of a teaching plan.

If the scientific student of psychology and education criticizes the present school dictionaries as instruments of instruction, it is fair that he should be required to show just how they can be made better. This should be an attractive problem to him—the problem of planning a book by the use of which pupils in Grades 5 to 9 can increase their knowledge of the meanings of words, and the consideration of it should be profitable to all teachers of the language arts, since each of them not only uses dictionaries as instruments of instruction, but is also a living vocal dictionary.

As a first problem, take the selection of words to be taught and the selection among the different meanings where a word has several. Many criteria could be used for this purpose. The best of them would approximate toward a ranking of word-meanings for the frequency with which lack of knowledge of the word-meaning hinders

the pupils in reading and understanding what is good for them to read, and a selection beginning at the top and extending down this ranked list to a point where the inclusion of the word did more harm by making the dictionary hard to use than it did good by its information. The commonest meanings of the two thousand leading words of the Thorndike List may not need to be defined at all,[3] since pupils who have reached Grade 5 know them. Words much beyond the twentieth thousand are of doubtful value, their occurrences in the reading of our group being extremely rare. It would almost certainly be an economy to treat them in a separate volume to be consulted in the very rare cases when a pupil did not find the word which troubled him in the main volume.

Pictures and diagrams should be used in accordance with the rule that the best way should be taken to teach the meaning, the time and training of the pupil far outweighing the added cost of manufacture. Inspection of a thousand words taken by chance from twenty thousand promising candidates for inclusion in a dictionary for Grades 5 to 9 will show that a picture or a diagram is desirable with at least one in ten of them.

Ideally the discussion of any word *x* should be in words which the pupil who seeks the meaning of *x* knows. This ideal cannot be realized, but we can try to use in the discussion of any word only words which are in general commoner and more likely to be known than it itself is. For example, a word in the tenth thousand of the Thorndike List should (except for reasons of weight) be defined or explained by words which are in the first nine thousand.

The operation of this one rule would add enormously to the value of school dictionaries. It would put an end to a very large fraction of the unintelligibilities which now baffle children, and destroy their interest in using the dictionary, such as:

camel: a large Asiatic and African ruminant quadruped.
nickel: a hard, malleable, ductile metal of the iron group, resistant to oxidation.
ignorant: destitute of knowledge.
kangaroo: a herbivorous leaping marsupial mammal of Australia and adjacent islands. See mammals. Illus.
windpipe: the trachea.
octave: an interval of eight diatonic steps.

[3] In some cases the common meaning may serve as a useful introduction to the rarer meanings.

abscond: to depart clandestinely.
ant: an emmet: a pismire.

If a definition of a word cannot be given save in words which the inquirer will probably not know, it is far better not to give a definition, but to take the necessary effort to devise illustrative sentences in which the context reveals the meaning.

We may hope by such illustrative sentences to provide something more instructive for children than, for example, the following:

substance: that which underlies all outward manifestations.
quality: a property, characteristic, or attribute.
quantity: the being so much with reference to a possible more or less.
relation: state of being related or inferring; state of mutual or reciprocal interest.

In general, such illustrative sentences should be used very often to supplement and replace definitions. Sometimes it is easy to find useful ones. "When you sing Do re me fa sol la si do, you sing the notes in one octave"; or, "She sang a note, then she sang one an octave higher"; or, "These two notes are an octave apart" (with a picture) would help out an interval of eight diatonic steps. Sometimes it is hard. Thus it will require study and perhaps experiment to frame sentences to identify and describe naphtha well, though we may reasonably hope to do better than "A volatile, inflammable petroleum product between gasoline and benzine," a definition which sounds suspiciously as if the dictionary maker did not really know what naphtha was and cribbed a definition out of a chemistry book.

It requires not only a sound psychology, but also great inventive skill, to find or frame sentences that lead pupils inevitably to the right meaning for a word. I cannot show you perfect products of the sort desired, but I can illustrate the process, by taking sentences from dictionaries now in use and showing how to improve them. Consider the following:

avenge: to require satisfaction for injury; as, time avenges.

This is bad because time is not at all a typical avenger, nor do we think of anybody as injuring time, nor of it as requiring or obtaining satisfaction. (To "obtain or get satisfaction," by the way, seems much better than to "require satisfaction"). A living creature will be better than time, and preferably one whom the pupils have learned

to think of as seeking vengeance. The best I can think of now is, *An Indian.* We also wish to make the getting of satisfaction clear, and to distinguish *avenge* from *punish for*, so *The Indian avenged the murder of his brother by killing the sons of the murderer.*

Consider this:

abed: in bed; as, the sluggard is still abed when the sun is high.

We can gain materially by having it a boy, or a girl, or a man, or a woman, rather than a sluggard. But we can make assurance doubly sure by putting in bed the sort of person who belongs in bed. So, *The girl lies abed because she is ill,* or even, *The girl lies abed because she is too ill to sit up.*

We have, so far, said very little about formal definitions. Much has been written about the logic of making definitions, but not much about the psychology of understanding them, and that not from the viewpoint of modern dynamic psychology. In general, the intellects of pupils in Grades 5 to 9 are not able easily to organize the facts given in a definition into knowledge of the thing defined, even when the words singly are understood. For example, many pupils in Grade 6 will not understand what *bandy* means from reading *curved laterally with the convex side outward, as a leg* even if they know what lateral and convex mean. Some of them will think that *bandy* is a curve, some that it is a side, some that it means convex, and some that it means a leg.

The best form of definition psychologically probably is an approximate synonym with the needed limitation, qualification, or specialization. Thus, *abscond: go away secretly; abhor: dislike very very much; admonition: warning or advice; agony: very great pain; annihilate: destroy entirely.* In such cases, there are only two (or occasionally three or four) facts for the child to organize, and the relations are fairly simple.

In framing definitions, as elsewhere, the maker of a school dictionary must consider the learner. A definition should obviously be a means of learning what the word means as well as a convenient way to remember and state what it means when you know it. Eternal vigilance in consideration of the learner is the price of success.

This article is to be concluded in the December RECORD

New Studies in Education

A STUDY OF THE OPINIONS OF CERTAIN PROFESSIONAL AND NON-PROFESSIONAL GROUPS REGARDING HOMOGENEOUS OR ABILITY GROUPING*

IT IS important in applying any educational policy to know the opinions of those upon whose understanding and coöperation the success of the policy depends. This study is an attempt to find out what parents, teachers, principals, and other school officials think about several phases of homogeneous or ability grouping. The primary purpose is to find out the extent of opposition or approval. The secondary purpose is to discover relationships between answers received and factors which might affect replies.

It took months to devise suitable forms on which to secure the information wanted. A number of cities were then invited to coöperate. The sixteen cities accepting were Atlanta, Atlantic City, Baltimore, Battle Creek, Beaumont, Cleveland, Cleveland Heights, Donora, East Chicago, Fort Wayne, Hazleton, Lakewood, Lynn, Oak Park, Racine, and Winston-Salem. From one to ten schools in each of these cities participated. The method used in securing the information might readily be adapted by others interested in sampling opinions of large social groups. Blanks were sent to each school to get opinions of the principal, six specified teachers, and parents of five children in each of these six classrooms. Well over 80 per cent of the blanks reaching the hands of teachers and parents were returned. It is interesting that of forty-five cities using grouping throughout their elementary schools in 1926, eleven had either abandoned its use or were rapidly moving away from it. It seems likely that the schools coöperating in the study constituted a group in which grouping worked better than it did in the majority of cities throughout the country.

FINDINGS OF THE STUDY

On the whole, parents seemed favorable to the use of grouping in those cities willing to have the matter openly investigated. This was especially true of parents whose children were in brighter groups. There was more parent opposition to grouping than was indicated by principals' estimates of parent complaints. Parents believe that children are at least as happy, do better school work, and are correctly sectioned, where grouping is used. Nearly 80 per cent of

* By WALTER H. SAUVAIN, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 596.

the parents say they know in which sections their children are placed. However, more than twice as many parents of children in slow sections stated the section incorrectly as stated it correctly. Parents knowing and admitting that their children are in slow groups are most opposed to grouping. In many instances real pressure is exerted upon children to get them into higher ability groups. More than four-fifths of all parents state that they believe their children know in which ability sections they are located.

Teachers seem to favor ability grouping more than do parents. Although bright and average groups are about equally popular with teachers, one-fifth of the teachers of slow sections would never teach such sections if given a choice in the matter. Less than 5 per cent of the teachers replying would definitely favor abandoning grouping. Less than 50 per cent believe that serious changes were needed in grouping practices which obtain in their schools.

Principals and school officials were fully as well pleased with ability grouping as were the teachers. When asked to list outstanding advantages and disadvantages of grouping in their schools, these people listed many more advantages than disadvantages.

Much of the study consists of detailed analyses of answers of parents and teachers bearing on such questions as the section in which the child was placed, basis on which grouping was done, educational philosophy of the answerer, adaptations of curricula, type of community, provision for enrichment or its lack, sex of the respondent and of the child concerned, and grade level where grouping was employed. These analyses, too elaborate to quote here, give clues which should be helpful to educational administrators interested in knowing what opposition to grouping might reasonably be expected and how it might be kept at a minimum.

THE RELATIONSHIP BETWEEN ITEM VALIDITY AND TEST VALIDITY*

WILL individually efficient items when grouped be materially better in predicting a criterion than a group of items each of which is less efficient individually? If so, will the shorter test obtained by eliminating the poorest items be better than the complete original test?

A 200-item vocabulary test was administered in 1930 to 370 bright eighth and ninth year pupils. For each of the 200 items a validity coefficient (bi-serial r) with the total score was calculated. The items were then ranked according to these coefficients. Four 20-item sub-tests and a 120-item criterion were formed on the basis of the ranks: the "best" sub-test from the 20 items ranking 1–20 in validity, the "high" sub-test from the items ranking 61–80, the "low" sub-test from those ranking 121–140, and the "worst" sub-test from those ranking

* By MAX SMITH, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 621.

181–200. The remaining 120 items constituted the criterion for measuring the validity of the four sub-tests.

In 1931 the 200 items were again administered, in rearranged order, to an equivalent group of 542 pupils. In 1932 they were once more repeated, this time in the original order, with a similar population of 527 pupils. In both cases the "best," the "high," the "low," and the "worst" sub-tests as well as the criterion were composed of the same items which constituted the corresponding sub-test in 1930—as determined by the 1930 validity coefficients.

FINDINGS

By far the least valid group of items was that with two bi-serial r's negative (—.18 and —.05) and with the other eighteen ranging from .02 to .27. Much better, but definitely inferior to the remaining two, was the group of "low" items, with bi-serial r's ranging from .42 to .45. Above $r = .53$, however, there was no demonstrated advantage in goodness due to higher average bi-serial r, the group of items with bi-serial r's ranging from .54 to .58 being about equal in validity to that whose r's ranged from .71 to .91.

Since bi-serial r's are not comparable for different sorts of populations, a particular sub-test found best for one group may not be superior for other populations. At most, then, any application of the results can be expected to yield, not a generally superior test, but only one which is more valid for a particular type of population and against a particular criterion. With the foregoing limitation in mind, the following general application may be made.

In the case where a test-maker has available a large number of items with item validity coefficients already calculated, there are two main methods of utilizing these coefficients: (1) by forming alternate forms from the thirty or so per cent of "best" items only, discarding all the others; (2) by eliminating the twenty-five or so per cent of "worst" items, forming the alternate forms from the remaining ones. The latter procedure will yield a larger number of equivalent forms of the test about as valid in general as those formed by the best items only.

In the case of multiple choice five-response vocabulary items, the results of the present study lead us to indicate a bi-serial r of approximately .40 as the standard for acceptable tasks at the Grade 9 to 11 level if the criterion has a reliability of about .95.

With regard to the second phase of the problem under investigation—improving the validity of the original test by discarding items—the same 120-item criterion was used, the 80 items of the four sub-tests being considered the complete test to be studied. For each of the three sets of data, the 60-item test formed by eliminating the 20 worst items was slightly, but not significantly, more valid than the complete test of 80 items. However, when the 20 "low" items were also eliminated the 40-item test remaining was significantly less valid than either the 60-item test including the "low" items or the complete test of 80 items. Consequently, item validity coefficients (if already calculated) should have been used to eliminate the "worst" items, but not the "low" items.

The gain in the size of the correlation coefficient obtained by eliminating the 20 "worst" items amounted to .0097 for 1930, .0032 for 1931, and .0065 for 1932.

Teachers College *in the* News

COMPILED BY CLYDE R. MILLER
DIRECTOR, BUREAU OF EDUCATIONAL SERVICE

"Teachers College, as an institution, holds no position, advocates no theory of education. It selects its faculty and, as every such institution must, permits each member untrammeled to present whatever his reflections and his researches lead him to believe."

From the *New York Herald Tribune*—

Leaders of American Science and Their Discoveries

The following is the seventh of a series of articles on leading scientists and their contributions in their fields.

Dr. Edward Lee Thorndike

Civilization is the flower of man's existence on the earth, and civilization is the chief product of man's ability to learn. Dr. Edward Lee Thorndike, professor of education at Teachers College, Columbia University, is almost universally regarded as the scientist who has contributed most to our knowledge of how we learn, and therefore the man who has penetrated most deeply into the roots from which civilization has sprung.

Dr. Thorndike has not stayed down at the roots of the tree of knowledge, he has worked upward to its topmost twigs, his course taking him into the most widely diversified fields of human endeavor. It was recently said of him: "No school is uninfluenced and no humanistic science is unaffected by his labor."

Professor Thorndike's labors have been prodigious and abundantly fruitful. On the occasion of his twenty-fifth anniversary of becoming a member of the faculty at Teachers College, celebrated in 1926, when it was desired to summarize his work, it was found necessary to call upon fourteen psychologists and other scientists in order to cover the widely diversified ramification of his activities.

During his thirty-five years as investigator and teacher he has published nearly 400 reports on almost as many separate lines of inquiry, and has published about thirty books. These volumes are crowded with experimental data. Perhaps the greatest compliment on these data was offered by a colleague who stated "his experimental data have never been questioned."

The thoroughness, accuracy, and insistence upon exact experiments yielding quantitative results which have marked Dr. Thorndike's work have performed a vast service in raising psychology to the level of a science.

"It is always difficult to determine whether historical movements are due to social and economic forces in which those prominent are epiphenomena, or whether they are caused by great men who lead them. However it may be, it is impossible to write the history of education or of psychology without giving prominence to Thorndike's name," wrote Dr. J. McKeen Cattell, editor of *Science*.

Dr. Thorndike started his study of mental phenomena by experimenting with animals, and he was the originator of

the three methods now most commonly used in animal experimentation—the maze, the puzzle box, and the signal or choice reaction.

"The main purpose of the study of the animal mind is to learn the development of mental life down through the phylum, to trace in particular the origin of the human faculty," states Dr. Thorndike.

The general public is undoubtedly best acquainted with that phase of Dr. Thorndike's researches which led to his announcement that the ability to learn is not confined to the years of childhood and youth but continues undiminished, and sometimes to an increased extent, to our later years. Adults from twenty-five to forty-five have the capacity to learn as youths twenty to twenty-five; easier than striplings between fifteen and twenty and far greater than the five to fifteen-year-old group, Dr. Thorndike revealed.

"Nobody under forty-five should restrain himself from trying to learn anything because of a belief or fear that he is too old to be able to learn it. Nor should he use that fear as an excuse for not learning anything which he ought to learn," was Dr. Thorndike's advice.

The study was extended to include the work of 331 of the greatest men in history and it was found that what Dr. Thorndike called the "masterpiece age" averaged just about forty-seven and one-half years. Among one special group of 119 great men the average "masterpiece age" was fifty-two. Among scientists the masterpiece age ranged around forty-five and among men of affairs between fifty-three and fifty-five. Some men recorded their greatest achievement at sixty, some at seventy, and a few when they were beyond eighty.

Man's power to learn is perhaps the most impressive thing about him and maintenance of civilization is dependent upon the maintenance of the ability to learn, states Dr. Thorndike.

"If the ability of man to learn were reduced by half, in the sense that the next generation could learn things only half as difficult to learn as those which man can now learn, most of human civilization would be unusable by the next generation and would soon vanish off the face of the earth," Dr. Thorndike says. "For example, most, if not all, that is taught in this university nobody could then learn."

Offsetting this glum possibility is a more cheerful probability which Dr. Thorndike sees for the future. Induced to look ahead for 1,000 years or more he made the prediction that "probably man will learn more; more of what he learns will be true and wise and he will learn it more quickly and comfortably. The distribution of learning among the population will be better organized.

"Of what sort the learners of the future will be we do not know, but of the possibilities of eugenics in intellect and character there can be no doubt. . . . Intellect is apparently the result not of one or two determiners but of many, so that the task of breeding high ability in or breeding idiocy out is much more complicated and laborious than the task of getting rid of curliness of hair or pinkness of blossom. But it is not impossible. I dare to believe that a time may come when a child born an idiot by germinal defect will be as rare as a child with twelve toes.

"How intelligent the race may become is uncertain. But if mankind really wanted to improve the nature of its children as much as it wants to improve conditions of life for itself and them, it could certainly hope within 100 generations to have a race of men whose average would be much nearer to the intellect of Newton, Pasteur, Gladstone, and Edison than to that of the average man of to-day. Its upper limit may or may not be set by conditions beyond human control, but its average may be moved toward the upper limit by even

the simplest and crudest types of selective breeding."

There has been a greater increase in knowledge during the last 500 years than in the previous 500,000, but there is no adequate evidence that inborn ability has improved at all. The intellectual leaders of to-day have better ideas but not better intellects than such leaders of the past as Aristotle, Dante, and Newton, Dr. Thorndike declares.

Dr. Thorndike is one of a family of four children, all of whom became teachers and achieved eminence in their fields. His older brother, the late Ashley Thorndike, became professor of English, and his younger brother, Lynn, professor of history, both at Columbia University, and his sister, a high school teacher.

He was born at Williamsburg, Mass., August 31, 1874. He took his A.B. at Wesleyan in 1895, and at Harvard in 1896; A.M. at Harvard in 1897; and Ph.D. at Columbia in 1898. He was instructor at Western Reserve University, 1898-99, then instructor in genetic psychology at Teachers College. In 1901 he was made adjunct professor of genetic psychology, in 1904 professor of educational psychology, and in 1923 the title was changed to professor of education.

He has received honorary degrees of S.D. from Wesleyan, 1919, Columbia, 1929, Chicago, 1932; and LL.D. from Iowa, 1923, and Harvard, 1934. In 1929 he was awarded the Butler medal for "exceptionally significant contributions to the general problem of the measurement of human faculty and to the application of such measurements to education."

On his twenty-fifth anniversary as a member of the faculty of Teachers College in 1926, he received a silver loving cup at a dinner attended by 250 of the country's outstanding scholars. On this occasion he said:

"I have hopes and dreams, some in the field of psychology and some outside. "Outside the field of psychology I have hopes and dreams reaching to the problems of government, economics, and morals. It seems a pity that man, who has progressed so far in his mastery of nature, has not yet mastered himself. The barriers which exist to-day are no longer physical, they are psychological and social. Is it not possible that psychology will help man to improve his mental tools?"

Dr. Thorndike was elected president of the American Association for the Advancement of Science for 1933–34.

From *Detroit* (Mich.) *News*—

Are You Eating Failures? Most Folks Are, Says Expert

Cookery Department Head Declares There's Great Chance for Improvement in Home Cuisine

By Ethel K. Ehlen

Did you ever eat a failure? According to Miss May Van Arsdale, professor of household arts, Teachers College, Columbia University, people are eating many failures to-day, whether they realize it or not.

This well-known teacher of teachers thinks women to-day have a better understanding of the science of cookery, meal planning, and marketing, but also suggests that there is plenty of room for improvement in this realm.

"The American woman needs to put more imagination into her menu planning and have a much better appreciation of food flavors.

"We hear many discussions about the flavor of a book or play, but very few about the flavor of food. This important word is being used figuratively rather than literally, as it was originally meant to be. Anything that is worth making at all, is worth making well.

"Good taste was originally associated with food, and what we really need in this country, is not more elaborate menus, but the best possible plain foods. A keen appreciation of good food is as necessary as an appreciation of art and music. Food that looks better than it tastes, is really immoral, because it makes a dishonest appeal to the palate," says Miss Van Arsdale.

To bring cookery into the home and not do away with it—to simplify methods and make the processes more pleasurable, is one of the chief aims in the modern school of cookery teaching. The study of cookery to-day means much more than just cooking. In order to meet a new economic age and cope with changing conditions in living, and at the same time preserve the art of cookery, methods of teaching this neglected science have been completely revolutionized.

Owing to the vast amount of prepared and canned foods which is being consumed by the average household, the marketing problem has been very thoroughly studied by the home economics teacher-students at Columbia. With prepared biscuit and cake flours, canned soups, stews, vegetables, fruits, and so on, it is a question of whether or not these are of sufficient value to warrant spending the extra money it takes to buy them, even if they do save a tremendous amount of time and energy. In the laboratories of the university the various commercial products are tested and compared with concoctions made in the classrooms. The comparative costs of home-cooked, prepared, and canned foods are also closely analyzed.

Miss Van Arsdale thinks that in considering home-prepared foods, especially for the housewife who must keep within a strict budget, her time in terms of compensation should not be at all considered.

Contrary to the general opinion of economists, Miss Van Arsdale believes the housewife is making her economic contribution by not counting her time. And, with this premise as a working basis, the new trend in cookery teaching stresses simplicity—palatable, nutritious meals, prepared with as little drudgery as possible.

To be more explicit, it means time-saving methods of preparation, seasonable foods, and a knowledge of balanced menus.

From the *Boston Transcript*—

Social Dancing as a Means of Developing Youthful Poise

"Social charm," says Lucille Marsh, "is more important to a girl than the study of geometry." This critic and lecturer on the great American dancing school states that the best time to start ball room dancing instruction is at about nine or ten years.

"Because," says she, "children at this age are frank, alert creatures unhampered by sex-consciousness, they go at the business as though it were a game, are more or less on their mettle to do well at it. Then, too, they assimilate rhythmic motions with greater ease and retain them longer when they are taught young."

At Manhattan's Horace Mann School experimental classes in social etiquette have had gratifying results. The school tried out classes in "party technique" on first-graders, teaching these five- and six-year-olds how to be perfect hosts and well-bred guests and holding small parties in connection with the classes. And the reaction of these infants was instantaneous and delightful. Miss Marsh reports their small parties to be amazing in their adult quality of graciousness and poise.

"With the parents' aid," Miss Marsh says, "well-conducted social etiquette and dancing classes may make a popular girl out of a prospective wall flower. Although children are apt to be cruelly

candid with one another, they're beautifully flexible as a rule. If there's a poor dancer in the class, she'll be told so in no uncertain terms and it is up to her (with the teacher's aid) to correct that shortcoming and regain her place in the class.

"Then there's the problem of dress. Conservative in their tastes, children are pretty likely to look askance at one who dresses differently from the rest of the group—especially if that difference tends towards the dull or dowdy side. One girl in a New York class used to wear Ground Gripper shoes and dark uninteresting frocks to dancing class. Because she dressed strangely, she was regarded as strange. I took the problem to her mother and, after a few conferences, persuaded her to outfit her daughter in light frocks and pretty shoes. You'd be astounded at the difference that simple change in costume made for that girl's whole outlook. From a rather dull, solemn child, she became gay and friendly —and before long was as popular as anyone else in the class. Little things like this make a huge difference to the very young, and it's only when very young that children can smooth them out."

Miss Marsh's recent national survey of dancing classes revealed that a tremendous number of our social dancing classes are still conducted on a Victorian basis. Small, squirming boys are made to wear white cotton gloves—which have not been worn to ordinary dances for at least two generations. They are made to bow deeply from the waist when requesting the honor of a dance, and the little girl (in accepting) is expected to spread her frilly frock in two hands and make a deep courtesy. These formalities would create little short of a sensation on to-day's ballroom floors.

Says Lucille Marsh, "These youngsters have enough to learn that will prove of actual use to them, without teaching them—and insisting on—archaic formalities that clutter up their minds and make the classes unpopular with them. At the better dancing classes today receiving lines are substituted for all this bowing and scraping. The children are instructed in meeting and greeting their hosts and one another, in the use of favors and refreshments. They are taught practical actions just as they will need them later on."

Employing carefully trained instructors, the finest juvenile dancing classes are completely flexible in their outlook, keeping an eye always on social trends and behaviorism, but maintaining the best sources and background for their information and instruction. Classes, started at sub-grammar age, are continued and elaborated through junior high and high school until a well-bred self-possession and social ease are perfectly automatic with the child. With the coöperation of parents and teachers, a thorough training of this sort, started at an early age, will make us a smoothly poised race, work wonders toward banishing phobias and inferiority complexes.

From the *Memphis* (Tenn.) *Commercial Appeal*—

Term Teachers Dumb

Dr. R. B. Raup of Teachers College, Columbia University, so characterized the average college professor. He said:

"The average college professor can't think clearly. He is unable to analyze problems thoroughly and logically. He is a 'yes man.'

"He doesn't know anything about political, social and economic problems which do not bear a direct relation to the subject he teaches. He cares even less."

Dr. Raup based these statements on replies to a questionnaire by more than 2,000 educators throughout the country. "More than half the teachers contradicted themselves at least once in every three replies," he explained.

From the *New York World-Telegram*—

Deaf Children Taught to Read by "Directions"

A group of children has been taught to read, without oral instruction, by the use of "written directions," Professor Arthur I. Gates, of Teachers College, who conducted the experiment, revealed in an address there.

The children were deaf. The material from which they learned was printed and mimeographed, with all illustrations done with a stylus on mimeograph stencils. Even with these somewhat crude facilities, the deaf children learned rapidly.

"To our real amazement," Dr. Gates said, "they were able at the end of the year, in which less time was devoted to reading than in a typical public school, to read even better than normal children at a corresponding grade position."

Dr. Gates cited this experiment to illustrate the possibility of emancipating teachers from the need of spending long hours drilling their classes in the "three Rs." He called the teaching of these "tool subjects" routine drudgery which interferes with real teaching, "developing character, introducing the child to the world about him, cultivating mental, social, emotional, recreational, and other resources and doing the many other things which the progressive programs of education call for.

"To anyone who studies the nature and causes of difficulties in the instrumental subjects, it becomes clear how enormous is the burden placed upon the teacher's shoulders of teaching these skills," said Dr. Gates.

"If the teacher fails, it is not because she is too lazy, ignorant, or perverse, but because she has to spend most of her time and energy laboriously preparing materials to teach and painstakingly teaching thirty or forty pupils of varied aptitude the fundamental instrumental skills.

"An absolute prerequisite of progressiveness in education is the development of means of reducing greatly this enormous, this almost crushing burden.

"I predict this will be done in the near future. I predict that within two or three decades the teacher need no longer be a slave to the three Rs."

Present dependence on oral instruction, said Professor Gates, is a survival of the days when printing was less universal and good textbooks few.

"Teachers must talk," he said. "Such is our tradition. The present American method is a product of necessity in the days when we had no good and inexpensive books, and when practice exercises, effective printed diagrams, pictures, charts, models, motion pictures, and phonographs were unknown, or at least unused."

From *New York Evening Post*—

Students in Soviet Divide Their Time Between Technical Study and Real Work

Dr. Mendenhall Finds Schools Run by Producing Units

"After all," began Dr. James E. Mendenhall, "the Russian school system is probably the second largest in the world, second in rank only to that of the United States."

Dr. Mendenhall, research associate at the Lincoln School, Teachers College, Columbia University, and recently returned from a short period of study in the Soviet Union, was a little hesitant to express "brash" conclusions.

"Technical education," he said, "seems to be the dominant emphasis in Russian education. You know, of course, that there are 26,000,000 people going to school in Russia."

For thirty days he was in the U.S.S.R. as an ordinary student of the American Institute of Moscow. This is a new project, made possible through the combined efforts of Professor Irving Sollins, the American director, formerly of New York University; Voks, or the Society for Cultural Relations with Foreign Countries; Intourist, the Russian travel agency, and the University of Moscow.

Dr. and Mrs. Mendenhall spent the first few weeks of their stay in Russia studying in Moscow.

"Russia must have skilled workers and engineers to build up the country," he said. "So every factory has its school, and the children, while they receive general education, are trained as workers."

"The producing unit," said Dr. Mendenhall, "whether that is a factory, mine, or farm, runs the school."

"In the upper grades," he said, "a part of the factory is set aside for training children. There, they spend a few hours each week actually working at the machines, or on the farm, as the case may be. But the children are not exploited—it is not child labor—they are simply learning."

Dr. Mendenhall thought that this was a considerable improvement over the old apprenticeship system.

"The students acquire an understanding of the relationship of their own producing unit to every other producing unit in the Soviet Union," he said.

Dr. Mendenhall said that he was impressed with the emphasis placed on "political knowledge" as an adjunct to technical knowledge and skill.

"This is a recent development," he said. "It is called poli-technical education. Russian engineers, for example, must be politically intelligent as well as technically skillful."

In other words, any one who would be an engineer in Russia must enjoy complete faith in the Russian political system, said Dr. Mendenhall.

From the *New York World-Telegram*—

New Era in Education

By Dr. Harry Elmer Barnes

Far and away the most striking and significant event in American education during the last year was the vigorous and ringing Report of the Commission on Social Studies of the American Historical Association.

Written by George S. Counts, of Teachers College, Columbia University, Charles Austin Beard, and men of comparable reputation as authors and scholars, it opened a deep rift between educational reactionaries and progressives.

This challenging document said nothing about the ventilation of school rooms or the latest card indexing system for filing scholastic reports, but it did bring education right out into the open and sharply up against the issues of our age.

Many who heartily sympathized with the tenor and content of this report feared lest its effect might be highly temporary—a flash in the pan soon to be forgotten in the hurly-burly of tabulating grades and quizzing reluctant sophomores. Such persons will be delighted to know that their fears have proved ill-founded.

Most of the men who signed the famous report of last spring, together with other sympathetic and distinguished educators, have launched the most promising and realistic educational journal of our generation. It is entitled *The Social Frontier*.

The chairman of the Board of Directors is Professor William H. Kilpatrick, of Teachers College, Columbia University, and the editor is George S. Counts. The more progressive members of the faculty of Teachers College are heavily represented on the Board of Directors.

On the front cover are printed in bold

and prominent fashion the ringing words from the report which were cited above, this being only one of the many proofs of the continuity between this journal and the Commission on Social Studies. The opening editorial frankly recognizes the transitional character of the present age and the part which education should play in the reconstruction of society. It states clearly the alternatives which we face:

"American society, along with world society, is passing through an age of profound transition. This fact has been proclaimed with ever greater emphasis and frequency by the march of ideas and events since the civil war, and particularly since the opening of the present century. . . .

"Owing to the revolutionary conquest of mechanical energy during the last one hundred years, the American people stand to-day on the threshold of unprecedented and unimagined potentialities of material and spiritual development. . . . They must choose whether the great tradition of democracy is to pass away with the individualistic economy to which it has been linked historically or is to undergo the transformation necessary for survival in an age of close economic interdependence."

The contents of the first number are indeed gratifying. There is an outspoken blast in behalf of academic freedom which discusses particularly the Shields case in North Carolina and the dismissal of Professor Ralph E. Turner, perhaps the most distinguished member of the faculty of the University of Pittsburgh.

John Dewey outlines the part which must be played by education in social reconstruction. Charles Austin Beard indicates the difficulty of maintaining political democracy in the face of the economic concentration produced by the corporation and holding company, while Henry Pratt Fairchild contributes an intelligent and persuasive plea for a New Deck instead of a New Deal with the same old cards.

From the *New York World-Telegram*—

Teach Students to Pet Snakes

Aversion for snakes and cod liver oil can be overcome with a little patience and a lot of repetition, according to Dr. Irving Lorge, of Teachers College, Columbia University.

Revealing the results of an eight-day experiment which enlisted the aid of twenty-nine persons, mostly students, who hired themselves out to handle snakes, drink cod liver oil and recite *Sheridan's Ride* in public, Dr. Lorge said that those who liked their tasks least, at the start, were indifferent to them when the eight-day period ended.

"The idea," he said, "was to investigate the influence of the repetition of obnoxious situations upon attitudes and to discover how people change their feelings for initially unpleasant tasks."

Taking cod liver oil, Dr. Lorge declared, is one task where "bluff" does little good. At first, he admitted, the swallowing of the oil repeatedly by the experimenters was accompanied by nausea and physical disgust. However, he added, this gradually shaded into indifference.

As far as snake handling was concerned, he declared, the subjects who shuddered at the mere thought of touching the wriggly things finally got around to fondling them without registering a goose pimple.

When it came to reciting *Sheridan's Ride* or some other poem or couplet in public the doctor had his troubles, as most of the subjects wanted to get up and declaim. However, a reluctant one eventually was found. How to overcome public indifference to declamation still is a mystery, he admitted.

The experiments were conducted under the supervision of Professor Edward L. Thorndike and the Institute of Educational Research at Teachers College.

From the *New York Times*—

Interneship Period for Teachers Offered in Bronxville Schools

Interneships for teachers, after the fashion of those in hospitals for young doctors, are being offered recent college graduates this year in the Bronxville, N. Y., public schools. By combining with them professional courses in education and psychology, as well as summer study under the auspices of Teachers College, Columbia University, the teacher-interne may be earning credits toward a New York State teaching certificate and a master's degree in education. For the latter, two years of full time assistant teaching are required under this arrangement, with the candidate's rating as to teaching success an important factor.

Thus in whatever grade he may choose, from nursery school through high school, the neophyte gains the chance to observe, and be part of, a progressive public school system. According to the plan, he assists at least two good teachers, does independent teaching, helps pupils individually and shares in lesson preparation and correction of papers.

Twice a week he discusses his teaching problems in a seminar conducted by the superintendent of schools, and he joins in the meetings of the regular teaching staff. Thus, too, the schools gain additional tutorial help and the stimulus of youthful enthusiasm.

Last year the plan worked successfully with twelve young men and women, mainly in the high school. This year it is being extended to all school levels. Superintendent Beatty believes that there are exceptional opportunities now for able men in the elementary school field.

College Notes

Board of Trustees of Teachers College

Arthur A. Ballantine, A.B. and LL.D., Harvard University; LL.D., Northeastern University (1931); Assistant Secretary of the United States Treasury, 1931–33; member of the law firm of Root, Clark, Buckner, and Ballantine, was elected by the Trustees of Teachers College a member of the Board at their meeting on Tuesday, May 15, 1934.

Educational Administration

Professor George D. Strayer attended the meetings of the Wyoming Education Association held in Sheridan on October 11–13. He delivered several addresses at this convention, as well as at a divisional meeting of the Association held in Casper on October 15.

The Administration Club held its annual fall picnic on October 6 at the home of Professor and Mrs. Strayer in Riverdale, N. Y. Games and various forms of entertainment were provided during the afternoon, and a picnic supper was served at five o'clock. Following the supper, the Club was organized for the ensuing academic year. The officers elected were: President, Glenn M. Kendall, Harvard, Neb.; secretary, Arvid J. Burke, Staatsburg, N. Y.; treasurer, Ray L. Stinnette, Lafayette, Colo.; student council representative, Price Chenault, Hartselle, Ala.; chairman of program committee, Lyle Ashby, Washington, D. C.

Professor Strayer addressed the Central Western Zone of the New York State Teachers Association at its annual meeting November 4 in Rochester. His address before the Health and Physical Education Division was entitled "An Integrated Program of Health and Physical Education." He spoke before the Administration Section on "Meeting the National Crisis in Education."

Mr. James H. Griggs has accepted a teaching position in the public schools of Des Moines, Iowa.

One of the conferences held under the auspices of the department during the Summer Session was on "The Relationship of Educational Plant Planning with Special Reference to Modern Community Planning." The conference was held in the Lincoln School auditorium July 20 with Professor N. L. Engelhardt acting as chairman. The purpose of the conference was to discuss problems common to both the city planner and the school authorities and to emphasize the values to be secured from coöperative community planning.

An exhibit of important developments and projects illustrating advanced planning was on display in the library of Teachers College during the week of the conference. City planning commissions, architects, city planners, the National Conference on City Planning, the National Recreation Association, and the Regional Plan Association of New York contributed maps, photographs, city plans, city developments, diagrams, and other materials for the exhibit.

Professor Engelhardt presided at the morning session. The first speaker was Mr. Burton W. Marsh, Director, Safety and Traffic Engineering Department, Washington, D. C., who spoke on "Traffic Problems and Their Relationship to School Plant Development." He was followed by Mr. Flavel Shurtleff, Secretary of the National Conference on City Planning, who spoke on "Zoning as It Affects the Location of School Plants." Mr. Robert Whitten, Consultant, New York State Planning Board, was the luncheon speaker. He discussed "The Aims of State Planning Boards."

At the afternoon session Professor Jesse H. Newlon presided. The first speaker, Mr. Harold M. Lewis, Engineer of the Regional Plan Association of New York, spoke on "The Major Street Plan as It Affects the Location of School Buildings." The last speaker of the conference, Mr. George D. Butler, of the staff of the National Recreation Association, New York, spoke on "Recreational Planning in Relation to School Plant Planning."

Each speaker was allowed forty minutes, after which the discussion leader took the remainder of the hour to answer questions raised by members of the audience and to review briefly the previous speaker's presentation. The discussion leaders were: Mr. E. E. Oberholtzer, Superintendent of Schools, Houston, Tex., and President of the Department of Superintendence, National Education Association; Mr. Lamont F. Hodges, Superintendent of Schools, Yonkers, N. Y.; Mr. Ernest A. Harding, Assistant State Commissioner of Education of New Jersey; and Mr. Alexander J. Stoddard, Superintendent of Schools, Providence, R. I.

The report of the Maine School Finance Survey, with which Professor Paul R. Mort has been associated as director, has recently come from the press. Other Teachers College staff members who were associated with the survey are Professor F. B. O'Rear as adviser on teacher training, Dr. Eugene S. Lawler as chief of the statistical staff, and Mr. Clyde R. Miller as adviser on public relations. Professor Harley Lutz of Princeton University was adviser on taxation and President Kenneth C. M. Sills of Bowdoin College is chairman of the Commission.

Dr. Lawler, who has been associated with Professor Mort in various research projects since 1930, has recently accepted a position as assistant professor of education at Northwestern University, Evanston, Ill.

Professor John K. Norton was the chief speaker at the Sixth State Education Conference held at the University of Alabama June 18–21.

Professor Norton spoke over a nation-wide radio hook-up October 6 on "The Foundation of Education."

Professor N. L. Engelhardt was a speaker at the commencement exercises held at Gloversville, N. Y., and Sayville, N. Y., in June.

Professor Norton has accepted appointment as a member of the Executive Committee of the Legislative Commission of the National Education Association.

Professor Norton will contribute one of the articles in a series on "Public Finance in the World Crisis," which is now appearing in *The Nation*. He will deal with the financing of education.

Among the recent dissertations of students in Educational Administration which have been published by the Bureau of Publications of Teachers College are: C. C. Baldwin, *Substitute-Teaching Service in City School Systems;* H. Mc-

Vey Davis, *State High School Examinations and the Work of Teachers;* William I. Pearman, *Support of State Educational Programs;* John W. Sahlstrom, *Some Code Controls of School Building Construction;* George D. Strayer, Jr., *Centralizing Tendencies in the Administration of Public Education;* Parl West, *A Study of Ability Grouping in the Elementary School;* Leon H. Westfall, *A Study of Verbal Accompaniments to Educational Motion Pictures.* The dissertation of Dr. W. E. Sheffer of Manhattan, Kan., *The Coöperative School Area in Kansas,* has been printed by the Kansas State Printing Plant, Topeka, Kan.

Dr. Harry A. Little has been appointed director of teacher training in Georgia State College for Women, Milledgeville, Ga. His dissertation, *Potential Economies in the Reorganization of Local School Attendance Units,* was published recently by the Bureau of Publications of Teachers College.

Mr. E. E. Oberholtzer, superintendent of schools at Houston, Tex., and president of the Department of Superintendence this year, has completed his work for the Doctor's degree at Teachers College. His dissertation is entitled *An Integrated Curriculum in Practice.*

Dr. Cecil W. Scott has accepted the position of high school principal at Westwood, N. J.

Mr. Samuel Engle Burr has taken office as superintendent of schools at New Castle, Del.

Mr. Garth H. Akridge, formerly superintendent of schools at Norphlet, Ark., has accepted a newly created position with the Julius Rosenwald Fund. He will act in a fact-finding and advisory capacity to state departments of education and the Federal Emergency Relief Administration on the Emergency Education program, particularly as it affects the Negro. The nature of his duties requires extensive travel in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. Mr. Akridge received the Master of Arts degree at Teachers College in 1932 and was assistant in Educational Administration during the academic years 1931–1933 and during the Summer Sessions of 1932 and 1933.

Dr. Leon H. Westfall has been appointed supervising principal at Jeffersonville, N. Y.

Mr. Rhoderic L. Lacy has been appointed assistant superintendent of schools in the Halifax County School System, South Boston, Va.

Mr. C. E. Douglass, formerly assistant superintendent of schools at Baltimore, Md., has been elected superintendent of schools at Newark, Del.

Mr. George A. Bowman, formerly superintendent of schools at Marion, Ohio, is now superintendent of schools at Lakewood, Ohio.

Mr. Eric T. Tebow has gone to Harper, Kan., as superintendent of schools. He formerly held the same position in Glasco, Kan.

Dr. Guy L. Hilleboe is now principal of a junior high school in Port Chester, N. Y.

Mr. Julius E. Scott, formerly junior high school principal in Peekskill, N. Y., was elected to the superintendency in Peekskill made vacant by Dr. Paul R. Spencer, who has taken over the prin-

cipalship of the senior high school, Trenton, N. J.

Mr. J. Colin English, formerly superintendent of schools at Fort Myers, Fla., and graduate student in Educational Administration, 1933–34, is now superintendent of schools at Ocala, Fla.

Mr. Richard B. Warren has accepted a high school teaching position in Hammond, Ind.

Dr. J. H. Smith, formerly superintendent of schools at West Aurora, Ill., has been appointed director of the Training School of the State Teachers College at Oshkosh, Wis. Dr. Smith is the author of significant contributions to textbook literature.

Dr. Parl West is now principal of the junior high school, School of Practice, State Normal School, Potsdam, N. Y.

Mr. George W. Feaser has accepted the position of superintendent of schools at Middletown, Pa.

Mr. I. E. Stutsman, formerly superintendent of schools at Greeley, Colo., has been elected to the superintendency at St. Joseph, Mo.

Mr. Albert B. Helmkamp, who took graduate work in Educational Administration during 1933–34, is assisting Dr. Luther Gulick, Chief of the Governmental Survey of Westchester County. Mr. Helmkamp's work is concerned mainly with the school end of the survey.

During the Summer Session the students of business administration made a number of visits to school systems in the metropolitan area for the purpose of studying business procedures and the character of the school buildings which have been erected recently in this region. Mr. Joseph Miller, Jr., secretary of the Board of Education in New York City, took one group on a tour of the offices of the Board, and outlined the work of the various officers engaged in administration. Other groups, under the direction of Professor Engelhardt, visited the new school buildings of New Rochelle, White Plains, and Rye, N. Y., where the local school authorities discussed with the groups the character of the plants and the nature of the educational programs being advanced. Business Manager George A. Marsh and Architect John Muller acted as guides for the second major group in business administration in a visit to the high school plant of Scarsdale, N. Y., and discussed with the students the problems of construction and of planning. The business offices of the schools in Harrison, Ardsley, and White Plains, N. Y., were visited by other students interested in the study of problems connected with accounting and other similar fields. The Summer Session students expressed many times their appreciation of the coöperative attitude of the school officials in the metropolitan area and of the hospitality extended to them as guests.

Adult Education

Visiting Professor Lyman Bryson accompanied Professors Edmund deS. Brunner and L. T. Hopkins and Mr. Arthur V. Linden to the two-day conference held in Wilmington, Del., October 5 and 6 to plan further developments of the adult education system in that state.

Among Professor Brunner's late spring and summer appointments were an address May 9 before the New Jersey Federation of Women's Clubs on "Behind Taxation"; an address before the New York City Principals Association May 12 on "Planning the Better Com-

munity and Its Leisure"; and an address at Massachusetts State College on "Rural Social Trends." This last was in connection with the celebration of the twenty-fifth anniversary of the Roosevelt Country Life Commission.

Professor Brunner also delivered two addresses at the state-wide Conference on Adult Education on June 22 and 23. His topics were "Adult Education and the Rural Community" and "Determining Specific Needs in Adult Education."

On October 7 Professor Bryson met with the Adult Education Council of Pittsburgh, Pa. On October 8 he addressed the Hungry Club on the topic "Can the Farmer Be Saved?" and also gave an address at the first meeting of the newly organized Community Forum on the topic "Do Ideas Have a Chance in Pittsburgh?"

At the annual meeting of the American Association for Adult Education held in Washington May 21–24, various members of the Teachers College staff participated. Professor Bryson engaged in a dialogue with Mr. Everett D. Martin on "The Objectives of Adult Education." He also acted as chairman of a section meeting on Research and Graduate Study, at which Professor Brunner was one of the two speakers. Professor Brunner also delivered the address at the meeting devoted to literacy programs, which was presided over by Mrs. Elizabeth C. Morriss, associate in Adult Education at Teachers College. Professor F. E. Johnson discussed "Adult Education and Religious Organizations."

At the same meeting Professor Bryson was reëlected to the Board of Directors of the Association and was appointed to the Executive Committee of the Board by Dean Emeritus James E. Russell. Professor Bryson also accepted chairmanship of the Research Committee and was appointed to succeed the late Dr. Henry Suzzallo on the Committee on Readable Books.

At the annual meeting of the National Advisory Council on Radio in Education held in Chicago October 8 and 9, Professor Bryson acted as chairman of the panel which discussed the problem "How Can Radio Broadcasting in the United States Be Improved?"

Professor Bryson spent October 10–13, inclusive, in Cincinnati, Ohio, as consultant in adult education for the survey of the public schools of that city which is being carried on by the United States Office of Education.

Child Development Institute

The Child Development Institute moved from Speyer Hall during the past summer and is now in operation in its new headquarters on the first, second, and fourth floors of the Lincoln Research Building, Teachers College. The essential features of the Institute's work are being carried on although several administrative changes have been made. The nursery school is now integrated into Lincoln School and the program is arranged to provide continuity from the nursery school to the four-year-old group and on up through the Lincoln School. Dr. Gertrude Driscoll of the Institute staff is in charge of the guidance program for the nursery school, kindergarten, and primary children through seven years of age. Miss Kathern McKinnon is head teacher in the nursery school and Miss Eloise White is assisting her.

A new plan for major students in child development and parent education was inaugurated this fall whereby a limited number of students may enroll for from two to twelve points of work each session in the department's major course. The course provides individual guidance of

each student by the instructors in charge, and includes student-staff discussions, guided reading, participation in research, field work, and outside lectures. Twenty-five students have been selected for this special type of program.

The Institute has continued to be actively associated with the emergency nursery school movement. During the last three weeks of the Summer Session fifty-five teachers from Connecticut came to the Institute to receive training for emergency nursery school work in the state of Connecticut. An intensive program including observation and practice in the nursery school, discussions, and reading was organized and directed by Miss Christine Heinig and Miss Kathern McKinnon.

Professor Lois Hayden Meek, as a member of the National Advisory Committee, participated in the regional training program for emergency nursery school teachers held by the Office of Education in Washington, D. C., during the week of September 5. She is also continuing her services as a member of the committee on emergency nursery schools in New York City.

Activities of Institute staff members during the summer and fall are briefly as follows:

Dr. Mary S. Fisher represented the field of child development at the seminar on Human Relationships held during July at Hanover, N. H.

Dr. Catherine Brackett was associate director of the nursery school during the summer session at the Institute of Euthenics of Vassar College, Poughkeepsie, N. Y.

Miss Adeline Missal presented a paper entitled, "What Does the Consumer Want to Know?" at the twenty-seventh annual conference of the American Home Economics Association in June. At the same meeting Mrs. Margaret G. Benz presented a paper on "The Work of the Family Consultation Bureau."

Mrs. Benz is teaching an evening course in social case work which is being offered in the general education division at New York University.

Professor Arthur Jersild presented a paper on "Children's Fights and Quarrels" at the annual meeting of the American Psychological Association held in New York September 8.

Professor Meek participated in the two-day conference held by the board of the Progressive Education Association in Washington, D. C., October 13 and 14. At that time there was presented to the Association a preliminary report of the study on Home-School Relations in Progressive Schools, which was made by Miss Sara E. Baldwin, a fellow at the Institute during 1933–34.

For some time the Institute has been experimenting with the development of proper specifications for silverware for children. The Oneida Community, Ltd., and the Wallace Company, manufacturers of silverware, have each recently produced a set of knife, fork, and spoon which incorporate the features and specifications developed by Miss Heinig and others of the Institute staff.

A number of former staff members are now engaged in interesting forms of work elsewhere. Mrs. Lea Cowles, formerly assistant in the nursery school, has recently been appointed to have charge of the organization and development of emergency nursery schools in Puerto Rico. Miss Marguerite Peterson, who was an assistant at the Institute last year, has accepted a position as state supervisor of emergency nursery schools in Connecticut. Miss Frances McClelland, assistant at the Institute for the past two years, has gone to Washington, D. C., to be associate editor of

Childhood Education. Miss Beatrice Billings, who was assistant nutritionist last year, has returned to her position at the National College of Education in Evanston, Ill. She recently participated in the program for parents arranged by Carson, Pirie & Scott in Chicago. Miss Alfhild Axelson, who has been nurse at the Institute for the past three years, is now nurse at Lincoln School, Teachers College.

Miss Marguerite Conyne, formerly executive secretary at the Institute, was married to Mr. Ray Ogden on September 12 at Gibraltar. Mr. Ogden is headmaster of the Ecole Internationale des Baleares in Palma, Majorca.

The fourteenth, fifteenth, and sixteenth volumes in the Child Development Monographs series, *Laughing and Crying of Preschool Children,* by Catherine W. Brackett, *Language Patterns of Preschool children,* by Mary S. Fisher, and *The Energy Requirement of Normal Three-Year-Old and Four-Year-Old Children,* by Elda Robb, have recently been issued by the Bureau of Publications of Teachers College.

Commercial Education

Mrs. Esta Ross Stuart participated in the Curricula Building Conference which was held by the School of Education at Stanford University June 28–30. Mrs. Stuart spoke to the Commercial Section of the conference.

Professor W. R. Odell spoke to the Commercial Section at the Northeastern Zone meeting of the New York State Teachers Association which was held October 4 and 5 at Lake Placid. His topic was "Critical Problems in the Field of Commercial Education."

Curriculum

Professor L. Thomas Hopkins attended the conferences on adult education for the State of Delaware, held at Wilmington, Del., October 5–6. On Friday, with Professors Lyman Bryson and Edmund deS. Brunner, he discussed "The Place and Purpose of Adult Education in the Social Scene," and on Saturday afternoon he gave a summary of the high lights of the conference. During these two days plans were formulated for a study of the adult education program in Delaware to make available the many outstanding values developed in this program over a period of years.

Professor Hopkins is continuing his direction of the curriculum revision program in Wilmington, Del., with seven instructors and two hundred and twenty-five enrolled students. The language arts program begun last year will be completed and new programs will be developed in art, music, home economics, and industrial arts, and for special class groups. A statement of the development of the program up to last year is contained in "Social Studies in Wilmington, Delaware," an article published in the September issue of *Junior-Senior High School Clearing House.*

Professor Herbert B. Bruner spent the week of October 15 in Fort Worth, Tex., in connection with the curriculum revision program there which is now entering its fourth year. Courses of study in social studies for the elementary school, and the junior and senior high schools, art for the elementary schools, music for the elementary schools, and science for the elementary schools have been completed. A course of study in language arts for kindergarten to grade twelve is now being formulated.

Part of the summer Professor Bruner spent in Germany and Russia, studying

the curriculum significance of certain modern problems, with special emphasis on housing.

Professor Bruner is working with the teachers and administrative officers of the public schools of Madison, N. J., in an extramural course set up for the purpose of considering the local curriculum problems.

Educational Psychology

During the Spring Session Professor Arthur I. Gates coöperated with officials of the New York City school system in a city-wide project in diagnostic and remedial work in reading. This project, to which were assigned about five hundred and twenty-five teachers employed by the Civil Works Administration, has yielded many results of professional and scientific value. In a typical sampling of the data it was found that specific remedial instruction extending, for example, over a period of forty-five meetings from thirty minutes to an hour in length, produced an improvement nearly equal to a normal year's growth in silent reading on the part of children who had previously been able to make little or no progress. At the present time a group of workers supplied by the Civil Works Administration are analyzing the data obtained from this and other experiments. The remedial project is being continued during the present session with nearly four hundred teachers employed.

With the aid of workers supplied by the Department of Public Welfare, Professor Gates is undertaking an investigation of the factors which determine readiness or maturity sufficient for satisfactory growth in introductory reading. A number of beginning children will be analyzed by many tests of vision, hearing, mentality, perception, linguistic aptitude, and the like, and their progress during the year will be followed.

Professor Gates addressed the Michigan Education Association in Detroit October 12 on "Recent Discoveries in Diagnosis and Instruction in Reading."

Professor Leta S. Hollingworth has been appointed a member of the Subcommittee on Hereditary Strength of the Committee on Social-Economic Goals of America, which was constituted in 1931 by the National Education Association.

Professor P. M. Symonds has had published a book entitled *Psychological Diagnosis in Social Adjustment* by the American Book Company. This book consists of four lectures delivered before the Psychology Club of Teachers College in the spring of 1934 on the "Diagnosis of Criminal Tendencies," "Diagnosis of Mental Disorders," "Diagnosis of Vocational Fitness," and "Diagnosis of Citizenship and Leadership." It also contains an extensive annotated list of personality and conduct tests.

At the annual meeting of the Association of Consulting Psychologists held at Rutgers University, New Brunswick, N. J., on May 12, Professor Symonds was elected president of the Association for the coming year.

Elementary Education

The series of conferences held by the department during the Summer Session was an outgrowth of interest of the staff, extending over a period of more than two years, in developing ways of furthering critical thinking with reference to problems of elementary education. One line of effort was that of the discussion group, which began in the summer of 1932 and culminated with a meeting the last week of the Summer Session of that year, in

which the emerging questions of the group were discussed by Professors George S. Counts and W. H. Kilpatrick. In the summer of 1933 the Elementary Education Association conducted a panel discussion which further contributed to the promotion of group thinking.

In the academic year 1933–1934 the department held a series of three conferences for elementary school workers—in January, March, and May—to which were invited the elementary school principals of the metropolitan area together with many other workers. In each of these conferences the program included lectures on Friday evening, many small-group panel discussions Saturday morning in which the same questions were considered by each group, and a closing general session in which varied methods of summarizing and focusing thinking were used. During the year all members of the College staff who gave courses pertaining to the elementary school years met repeatedly in conference under the leadership of Professor J. R. McGaughy. In the Summer Session of 1934 there was a series of conferences under the administrative leadership of Dr. Whit Brogan. The series included lectures, conferences, and panel discussions, utilizing an afternoon hour throughout the summer in addition to three evening meetings. The last of these evening meetings was in the hands of the students. A committee made up of representatives from each course in Elementary Education assembled the emerging problems as they arose in the respective classes. These problems were organized into questions and presented to Professor Kilpatrick, who answered them in a large public meeting held in the Horace Mann Auditorium the last week of Summer Session.

Through these agencies the staff of the department has been seeking to promote critical thinking in its field and also has been studying the problem of finding the best ways of promoting such thinking. Further effort in this direction is contemplated in the present academic year.

During the first month of the college year members of the staff participated in community, district, and state educational conferences in the following towns: Saginaw and Escanaba, Mich.; White Plains, Cold Springs, and Lake Placid, N. Y.; Burlington, N. J.; and Hartford, Conn.

Students are encouraged to use the department as a laboratory in which to develop problems relating to their particular interests or special needs as experienced in the field. A number of studies which were made by former students are now available in mimeographed form. A list of these may be obtained from the office of the department.

Members of the staff and a few elementary school workers in the metropolitan area have held meetings during the past two years to discuss some of the crucial problems and significant trends in elementary education. Professor McGaughy will serve as chairman of the conferences this year.

This group seeks the opportunity to exchange expressions and reports with other groups that may be engaged in a similar program. The department offers its facilities as an exchange bureau to study or panel groups in the field. Discussion or panel conference groups are urged to send in reports of their programs or conferences.

English

Professor E. C. Cook spent the summer months at work on her new volume on the revaluation of American literature, which will be published by Little, Brown & Company.

Professor Ida A. Jewett is co-author with Professor Maxie N. Woodring and Miss Rachel T. Benson (Mrs. J. V. Bailey) of *Enriched Teaching of English in the High School*, Revised and Enlarged Edition, which was published recently by the Bureau of Publications of Teachers College.

Mrs. Imogene Cowles has recently been made one of the trustees of Dana College, Newark, N. J.

Miss Amy I. Shaw, who gives the courses in English for foreign students at Teachers College, is a visiting instructor during the current academic year at the Constantinople Woman's College, Istambul, Turkey.

Fine Arts

Professor Belle Northrup recently gave a lecture and demonstration of illustrative material in costume art to the teachers of art and clothing of Kitchenet, in the Province of Ontario. At the National Home Economics Convention, which met in New York City, she gave a talk on "Your Personality and Your Clothes." In August she spoke over Station WEVD on the topic "Art in Daily Living."

Professor Belle Boas spoke to the art section of the Northeastern Indiana Teachers Association Convention which was held October 19 at Fort Wayne.

Miss Elise Ruffini's advanced painting class held an unusually interesting exhibition in the Morton Galleries at the close of the Spring Session. The critics were most favorable toward the whole exhibition, mentioning several of the numbers as being without question "out of the amateur class."

Guidance and Personnel

Mr. Edgar Spady (M.A. 1930) has accepted the position of Coördinator, or liaison officer between the schools and industry, in the public schools of Richmond, Ind.

Mr. David Garber (M.A. 1934) has been appointed vocational and educational counselor in the public schools of Hershey, Pa.

On October 6 Professor Harry D. Kitson entertained the major students in Guidance and Personnel at tea in his apartment. About seventy-five persons attended. Guests of honor were: Dr. Franklin J. Keller, director of the National Occupational Conference, Mrs. Keller, and Mr. Edward Cray, president of the New York City Branch of the National Vocational Guidance Association.

A brief report of the activities of the Teachers College Branch of the National Vocational Guidance Association during the past year was made by the president, Mr. Clarence W. Failor. Officers for the ensuing year were elected as follows: President, Irwin J. Stone, Toronto; secretary-treasurer, Marylee Collins, Birmingham, Ala.; student council representative, Clarence W. Failor, Fort Madison, Iowa.

As chairman of the Committee on Vocational Guidance of the National Advisory Council on Radio in Education, Professor Kitson is assisting in the preparation of a series of lessons on "The World of Work," to be broadcast every Friday afternoon, beginning October 26, by the American School of the Air (Columbia Broadcasting System). The lessons are in the form of dramatic skits presenting problems of occupational life.

On October 26 Dr. Roy N. Anderson addressed the Columbia Grammar School

of New York City at their assembly period. His topic was "The Vocational Problems Confronting This Generation." On November 7 he addressed the Parent-Teacher Association of the Junior High School, Mamaroneck, N. Y.

Dr. E. J. Sparling (Ph.D. 1932) has accepted the position of dean of men at Hiram College, Hiram, Ohio.

Dr. Anderson has been asked to serve as chairman of the Commercial Exhibits Committee for the National Vocational Guidance Association.

History

On October 11 Professor Mary E. Townsend addressed the women's section of the Triennial Convention of the Protestant Episcopal Church, which met at Atlantic City, N. J. Her topic was "The World To-day."

Horace Mann School

The following teachers have joined the staff of the Horace Mann School this year: Mrs. Mary Marshall (English), formerly a teacher in the Beaver Country Day School, Brookline, Mass.; Mr. Kerry Smith (English), of the Madison, N. J., High School; Mr. Willis Armstrong (history), who last year was a student in Teachers College; Miss Gertrude Wylie (science), of the Winsor School, Boston, Mass.; Miss June Common (science), assistant in Teachers College last year; Miss Pauline Scheidt of the University Elementary School, University of Michigan, Ann Arbor; and Miss Dorothy Luxton (fine arts), an assistant supervisor in the elementary schools of Kansas City.

In the Horace Mann Elementary School, in connection with the study of individual pupil interests and abilities as a basis for more effective individualization of instruction, including remedial teaching and direction of study, a careful study of readiness for learning to read in Grade I is being made and an extensive program of measurement includes such new tests as the Metropolitan, Stone, and Van Wagenen. Various tests of reading skills are being given, Gates and others, emphasizing particularly the diagnostic battery, and still others were made last year of motor coördination, handedness, and steadiness. Careful estimates of learning and progress in reading have been kept by the teacher, and parents are coöperating in this study by recording data on home experiences and training in both the current year and the years previous to school entrance. One significant aspect of this study is a very complete summary of experimental literature. This is one part of the extensive curriculum research which is being carried on by the Horace Mann staff and which will be published later as the Horace Mann Plan for Teaching Children. In addition to the usual music program, both vocal and instrumental, remedial work in pitch discrimination and control is being given by Miss Frances E. Jacobs; choir work for children in the upper elementary grades who have superior ability and interest in singing is offered; and instruction in using the "Enharmonic Pianoforte Keyboard," designed by Mr. David Barnett who will personally conduct the course, is also offered.

The Horace Mann School is extending into the eleventh grade the program which was offered last year in tenth grade in the first year of experimentation in connection with the school and college plan of the Progressive Education Association. The plan originally outlined is being extended, new materials are being

collected, and organization of these materials is under way. The work of this year in the eleventh grade centers on a study of modern civilizations other than our own, continuing the program of last year, which considered the development of American culture and civilization. This program is under the combined direction of the English and social science departments. More and more departments in the school are participating as their material relates itself naturally and easily to the core themes. In addition to the departments of music, fine arts, and household arts, the modern language classes are this year coöperating in the development of that part of the year's study that relates to modern Europe. For the time being, science and mathematics are being taught independently. Faculty meetings of the School at the beginning of the year were devoted to a consideration of the best possible means of evaluating the new curriculum. Some of the questions which have been presented by the group are: Can one type of record function in all departments? Can the same plan of records and reports apply to both junior and senior high school? How can we assure ourselves that, in establishing a new and freer system of grading, we are providing the guidance essential for girls of secondary school age? The school schedule this year allows a free afternoon for excursions in all classes through the eleventh grade. There has never been in the Horace Mann School the dividing line between curricular and extra-curricular activities which frequently exists elsewhere. The new program, however, gives still greater opportunity for the consideration of the better development of the girl, mentally, socially, and emotionally, from the standpoint of her total school experience, whether this be in the field of strictly intellectual activity in the classroom or in relationships developed outside the class.

Teachers interested in the educational value of student organization may wish to read *Education for Constructive Social Influence through Student Organizations*, one of the Horace Mann Professional Books published by the Bureau of Publications of Teachers College.

Household Arts

On October 18 Professor Maurice A. Bigelow addressed the social hygiene section of the New York State Conference of Social Work on "Education for Marriage and Family Social Relations," a digest report on the conference held in Teachers College in July.

Approximately four hundred former students and graduates of the Household Arts department were present at the Teachers College Home Economics Dinner given at the College June 25. The reunion was one of the features of the American Home Economics Association, which held its annual convention in New York June 25–29. Miss Frances Zuill, retiring president, and Miss Effie Raitt, the incoming president of the Association, were honored guests among the alumnae.

Professor Wilhelmina Spohr spent the interval between the Summer Session and the Winter Session traveling in Mexico.

Professor Anna M. Cooley represented the American Home Economics Association at the Fifth International Congress of Home Economics held in Berlin August 21–25.

Professor Lillian H. Locke spoke before the Home Economics Department of the Maine Teachers Association in Portland on October 25. Her topic was "Subscribing to Realities, Theories or Fads."

Institute of School Experimentation

Professor Otis W. Caldwell gave the centennial address at Franklin College, Franklin, Ind., October 17 on the topic "Past and Prospect." He spoke at the dinner program of science teachers of Western Pennsylvania October 19 on "The Place of Science in Education," and before the Maine State Teachers Association October 25 on "Improving Biological Instruction."

Dr. J. W. Wrightstone has completed a two-year unit of his study on appraisal of practices in selected newer-type public schools compared with selected standard-type public schools. The results of the appraisal will soon be ready for publication. Another two-year unit of this study begins this year.

A new extramural course on activities in the elementary school, their development and appraisal, is being given by Dr. Wrightstone in Summit, N. J., on Tuesday afternoons.

A book entitled *Do You Believe It?*, giving a popular presentation of studies that have been made on superstitions and other unfounded beliefs, by Otis W. Caldwell and Gerhard E. Lundeen, was published on October 24 by Doubleday, Doran and Company. This book attempts to present the factual aspects of superstitions and to outline the techniques developed through the experiments for correcting such attitudes.

Dr. Julius B. Maller has recently addressed the following groups; New Haven Conference on Sociological Research in the Field of Adolescence; teachers and principals of School District No. 26; a group of playground directors, on play school project; the New York Society for Experimental Study of Education.

International Institute

Professor Lester Wilson spent the larger part of the summer as a member of a group making a social and economic survey of Cuba. The survey was organized by the Foreign Policy Association, under the direction of Dr. Raymond L. Buell. Other members of the staff were Dr. Smile and Dr. Zimmerman of Harvard; Dr. Jenks of Wellesley; Dr. Fetter and Dr. Graham of Princeton; Dr. Ernest Gruening, now Director of Insular Affairs for the United States Government; Assistant United States Secretary of Agriculture M. L. Wilson; Miss Hall, Director of the Henry Street Settlement; Mr. Thompson and other members of the Foreign Policy Association permanent staff. Professor Wilson made the special study of the educational situation in the island. The report will be published simultaneously in Spanish and English early in the winter.

Library

Professor Eleanor M. Witmer was appointed one of the representatives of the American Library Association to attend the meetings of the American Council on Education in New York on November 2–3.

Professor Carter Alexander gave his course on How to Locate Educational Information and Data in the summer school of the University of Texas and worked individually with the Master's and Doctor's degree candidates in education on their theses.

Professor Alexander attended the meeting of the Superintendents' Section of the Northeastern Division of the New York State Teachers Association held at Lake Placid on October 4. He presented a minimum professional library for school executives in the smaller school systems,

with a mimeographed, annotated list, and showed the books themselves.

The Browsing Room and the School Library Laboratory moved on October 20 from Rooms 311–312 Teachers College to larger and more attractive quarters in Rooms 102–103 Dodge Hall. Advantageously located on the first floor of the building and in direct line with the cafeteria the room is enjoying even greater popularity than ever before. Smoking is permitted.

Lincoln School

Miss Lilian Stevens contributed an article on "Everyday Problems in the Kindergarten" to the June number of *The Mental Hygiene Magazine.*

Miss Etta Anchester gave two courses in the summer session of the State Teachers College at Winona, Minn., one on industrial art in primary grades and the other on reading in the primary grades.

Dr. Fred Strickler taught at the Colorado State Teachers College, Greeley, Colo., for two weeks in June.

Mr. Irving Cheyette was visiting lecturer at the Teachers Institute, Boston Diocese Department of Education, in August. In collaboration with Mr. Charles J. Roberts he has published a band book, *Bridging the Gap* (Carl Fischer), comprising complete repertoire for first year bands, and *Setting the Pace*, on orchestra album for first year orchestras.

Dr. Paul R. Hanna spent the first week of June at the College of William and Mary, Williamsburg, Va., consulting with committees on the revision of the Virginia State Course of Study. During the same month he gave a series of lectures on curriculum at Southern Methodist University, Dallas, Tex., and participated in a curriculum conference at Stanford University. Following the conference he was a visiting member of the University faculty for the eight-weeks summer session. On October 12 Dr. Hanna gave two lectures at Burlington, Vt., in connection with the Vermont Teachers Association.

Mr. Samuel Everett was appointed chairman of the Committee on Secondary Education of the Society for Curriculum Study at its February 1934 meeting. Each of the fourteen members of this committee will produce a thoroughgoing high school curriculum plan, including a statement of social and educational theory, the problem of method, detailed curriculum plans for junior and senior high school, suggestions for administration, and a brief indication of the elementary and higher education which the author would like to see precede and follow his high school curriculum.

Professor Jesse H. Newlon spoke in Detroit October 26 at the Michigan Education Association meeting.

During the summer, Dr. Newlon's book, *Educational Administration as Social Policy,* came from the press of Charles Scribner's Sons. This volume is Part VIII of the series comprising the Report of the Commission on the Social Studies of the American Historical Association.

At the close of Summer Session Professor and Mrs. Newlon took a brief holiday abroad, spending some time in France and England and on the continent.

New members of the Lincoln School faculty are Miss Dorothy McMurry, teacher of fourth grade, Miss Margaret Dawson, teacher of the four-year-old group, Miss Mildred Frazee, teacher of third grade, and Miss Kathern McKin-

non, who has charge of the three-year-old nursery group of the Child Development Institute, which is now housed in the Lincoln Research Building.

During the summer Miss Marjorie Heath became Mrs. N. Eldred Bingham. (Mr. Bingham is also a member of the Lincoln School staff.) Miss Ruth Flint became Mrs. Stephen A. Rizzi, Jr.

Mathematics

Professor C. B. Upton spoke at the meeting of the New York State Teachers Association held at Utica on October 26. He gave two addresses, one before the Elementary Principals Section on "The Changing Curriculum in Arithmetic" and the other before the Intermediate Section on "The Teaching of Arithmetic in the Intermediate Grades."

Professor Upton spent the summer in Europe, visiting France, Switzerland, and Northern Italy.

Music

During October Professor Peter W. Dykema spoke on "How Parents Can Aid the School Music Program" before the State Parent-Teacher Association meeting at Long Beach, N. Y., and for the same organization presented a program by two choruses drawn from junior and senior high schools of Long Island.

On October 19 Professor Dykema addressed the general session of the Northeastern District of the Pennsylvania State Education Association, at Pottsville, on "Music in Normal Living." In the morning he opened the discussion of the senior high school section on "How Can the Present High School Program of Studies and Activities Be Made to Contribute More Adequately to Character Education?"

Professor Norval L. Church appeared before the East Tennessee Education Association at its meeting in Knoxville October 24–26. He conducted a concert by the All East Tennessee High School Orchestra, recruited with full symphonic instrumentation from the high schools of that section of the state.

Professor Alice E. Bivins, in addition to teaching her regular classes, is directing the greatly expanded program of observation and practice teaching which now involves not only schools in New York City but also those in outlying communities in Westchester County, Long Island, and New Jersey.

Under the direction of Mr. Miles A. Dresskell the regular series of Teachers College String Quartet recitals was inaugurated on October 19 in Milbank Chapel. The opening program was Haydn Quartet in C, Op. 33, No. 3.

On June 13 his alma mater, Knox College, Galesburg, Ill., conferred the honorary degree of Mus.D., on Mr. Howard A. Murphy.

Dr. E. J. Stringham spoke before the Connecticut State Teachers Association at Hartford on October 26. His subject was "The Place of Music in the New Social Order." Following the Summer Session, Dr. Stringham was a member of the MacDowell Colony at Peterboro, N. H., where he completed his work on compositional sketches for a string quartet.

Professor Dykema is again serving as chairman of the In and About New York Music Educators Conference, and has arranged the following schedule of meetings for the season; October 20, November 24, February 9, and March 30, from 5 to 8 p.m. at International House, New York City.

Professor Dykema is also serving as chairman of the new series of broadcasts for the Music Educators National Conference. There will be two series, one in the fall and one in the spring. The first series opened October 21, the program coming from Rochester, N. Y., under the direction of Mr. Charles H. Miller. The second program, on October 28, came from Hempstead, L. I., with Miss Imogene Boyle in charge; the third, on November 4, was presented under the direction of Mrs. Loretta Knights Kinnear, Mount Vernon, N. Y.; the fourth, on November 11, will come from Wilkinsburg, Pa., with Mr. Frank C. Biddle in charge; the fifth, on November 18, will be presented by a group from in and about Chicago; and the final one, on November 25, will come from a group in and about Boston.

Miss Elsa Findlay, in addition to her usual courses in Dalcroze Eurhythmics, is offering a new course this year in staging music dramatizations. She is busy with many outside activities, among them the staging of the dances for Sean O'Casey's *Within the Gates*, which opened October 23 at the National Theatre, New York City.

Mr. Robert Elwyn, instructor in voice, died October 17 of multiple neuritis. A musical service dedicated to his memory was held October 31 in Milbank Chapel.

The annual Christmas party of the department will be held on December 15.

Normal School Education

Professor E. S. Evenden was the leader of a group who discussed "The Principal Elements in the Training School Program" on October 18 at the meeting in Albany of the New York State Association of Normal School and Teachers College Faculties.

Professor W. C. Bagley is the author of *Education and Emergent Man*, a book published in June by Thomas Nelson and Sons in the Nelson Education Series, which is edited by Professor I. L. Kandel.

Professor Bagley gave an address, "Education Outruns Training," at the Convocation of the University of the State of New York October 19. This Convocation celebrated the one-hundredth anniversary of the first state appropriation for the education of American teachers, which was made by the New York Legislature in 1834.

Professor Florence B. Stratemeyer returned in September from a three-months stay in Germany with a group of New College students.

On October 18 Professor Stratemeyer led a discussion group on the topic "The Values of Integration and Articulation of Teacher Training Programs" at the meeting in Albany of the New York State Association of Normal School and Teachers College Faculties.

On November 2 Professor Bagley addressed the Northern Section of the Illinois State Teachers Association at Joliet.

Professor Bagley addressed the teachers of Baltimore County, Md., on September 7; the teachers of Frederick County, Md., on September 21; the honor society, Kappa Delta Pi, at the New Jersey State Teachers College, Upper Montclair, on October 5; and the "homecoming" at the State Teachers College, Mansfield, Pa., on October 20.

Nursery School and Kindergarten–First Grade Education

The kindergarten teachers of Yonkers, N. Y., and the staff of the department met at a dinner conference at the Men's

Faculty Club on October 15, to discuss the pertinent problems of young children from two to six years of age. The purpose of this meeting was to discover in what ways the two groups could be of mutual help. The problems brought up for discussion pointed to the need of many conferences in the future.

The department is glad to welcome Mrs. Emma Sheehy back as a member of the staff of the Horace Mann Kindergarten. Mrs. Sheehy has been with the Kindergarten for several years, but was away last year. The staff is also happy to have Miss Margaret Jipp, a graduate student of the department, serving as student assistant in the Horace Mann Kindergarten.

Miss Alice Dalgliesh, one of the regular teachers in the Horace Mann Kindergarten and a member of the staff of the department, has been asked to serve on the editorial staff of Charles Scribner's Sons as editor of children's books. Miss Dalgliesh will continue to give her course at the College on Literature for Children.

Miss Edith Conard is giving a course in manuscript writing in Passaic, N. J., for both public and private school teachers, and a series of lectures to teachers in Pelham, N. Y. Both groups of teachers have taught manuscript writing for a number of years but are eager for definite help in improving their work.

Miss Charlotte Garrison spent the summer in Maine. In collaboration with Professor Gerald S. Craig, she worked on a monograph for teachers on Science for Young Children.

The Lower Primary Club held its first meeting on October 9 in the Patty Smith Hill Social Room. The following officers were elected: President, Miss Martha Seeling; vice-president, Mrs. Anna Lesser; secretary, Miss Gertrude Hosford; and treasurer, Miss Martha Springer. Plans for the year were made, after which tea was served.

Nursing Education

Professor Isabel M. Stewart represented the department at the meeting of the State Nurses Association in Buffalo, N. Y., October 15–18, and spoke on the curriculum revision program which is to be carried on this year by the National League of Nursing Education, with the collaboration of the department, the New York State Department of Education, and other agencies.

The headquarters of the Central Curriculum Committee will be at Teachers College. Professor Stewart is chairman of the committee and Miss C. Mabel Smith, who has been associated with the work of the Curriculum department in Teachers College, has been engaged as secretary of the committee. A parallel educational program will be carried on through the department of Nursing Education, which will offer special courses during the Spring Session, Intersession, and Summer Session for nurses interested in working on curriculum problems.

Miss Mary E. Chayer spoke at the State Teachers Association, Burlington, Vt., October 12 on standards of school health work, and was a guest speaker at the Women Teachers Club banquet in the evening.

Miss Louise Knapp, for two years instructor in public health nursing in the department, has accepted a position as professor of nursing education at Wayne University, Detroit, Mich. Mrs. Josephine Prescott has been appointed to fill Miss Knapp's place. Mrs. Prescott has had wide experience in the field of public health nursing and for the past few years has been consultant on pub-

lic health nursing, Bellevue-Yorkville Health Demonstration, New York City.

Miss Virginia Henderson has been appointed instructor in Nursing Education, Teachers College. She has been on a fellowship for the past two years, working on problems relating to nursing practice. In addition to the regular courses in this subject, Miss Henderson will offer an advanced course in the spring for those who are expecting to qualify as teachers of the nursing arts.

Miss Grace Warman, superintendent of the Nursery and Child's Hospital, New York City, has been appointed assistant to Dr. Frederick C. MacCurdy in the course in hospital administration.

Miss Nellie X. Hawkinson, a former member of the Nursing Education staff, who spent the past year at Teachers College in advanced work, has been appointed director of the recently organized nursing education department at the University of Chicago.

Miss Naomi Deutsch, a graduate of Teachers College who was for several years a supervisor on the Henry Street Visiting Nurse Association staff and more recently superintendent of the Visiting Nurse Association of San Francisco, has been appointed professor of public health nursing at the University of California.

Miss Anne Austin, recently assistant superintendent of the Farrand Training School for Nurses, Detroit, Mich., who was instructor on the Nursing Education staff for the Summer Sessions of 1933 and 1934, has been appointed to the staff of the Western Reserve University School of Nursing, Cleveland, Ohio, and will teach courses in social science in the Nursing School.

Physical Education

Professor Jesse Feiring Williams spoke at the Health Education Institutes held at Salem and Brockton, Mass., October 15 and 16, respectively, on "Basic Principles in the Organization of Health Education." He also presided at the panel discussions held in the evenings.

Professor Williams addressed the general meeting of the Northeastern Ohio Association held at Cleveland October 26 on "Some Essentials in Education."

On October 19 and 20 Professor Williams was the guest speaker at the annual Western Pennsylvania Education Conference at Pittsburgh. His subject was "Which Way Physical Education?" and his response to the toast at the banquet "A Challenge." He presided at the panel discussion on the second day of the conference.

Miss Anne Schley Duggan was the guest instructor October 18 and 19 at a Conference of Public School Teachers in Springfield, Mass. At this conference, under the supervision of Miss Ruth Evans, Miss Duggan gave illustrations of practical work, and lectures and demonstrations of the materials contained in the revised rhythmical program of the Springfield Public Schools.

On October 19 Dr. F. W. Maroney addressed the Southwestern Indiana Teachers Association at Evansville on "The Physical Education Teacher's Responsibility for Health Education." He was the speaker at the Women Teachers Club luncheon on October 27 at Scranton, Pa., the title of his address being "Protect the Power House."

Professor C. L. Brownell addressed the Physical Education Section of the State Teachers Association in Providence, R. I., October 25 on "Physical Educa-

tion and Problems of Community Recreation."

Secondary Education

The National Education Association on Orientation of Secondary Education, of which Professor Thomas H. Briggs is chairman, has printed a limited number of copies of its tentative report of the issues in secondary education for use by some thirty discussion groups in various parts of the country. The committee held its fourth meeting at Lake Placid, N. Y., October 7–12.

Professor Briggs's schedule of speaking engagements for this fall includes: October 17 and 18, Northeastern Indiana State Teachers Association at Fort Wayne; October 23, the parents and teachers of Yonkers, N. Y.; October 25 and 26, Northwestern Division of the Illinois State Teachers Association at Rockford; November 6, the Canadian Education Association at Toronto; November 9, a group of teachers from four counties at Kane, Pa.; December 7, the Michigan High School Teachers Association.

Professor Elbert K. Fretwell has addressed the following groups during the autumn months: under the direction of the Department of Education of Maine a series of county teachers' institutes of that state, September 24 and 25; the student body of the College of St. Elizabeth, Convent Station, N. J., October 4; county teachers' meetings at Bath and Farmington, Me., October 8 and 9; the teachers' institute of Macon County, Ill., at Decatur, October 11; the East Central Divisions of the Illinois State Teachers Association in the auditorium of the University of Illinois, Urbana, October 12; the Wyoming County teachers at Tunkhannock, Pa., October 19; the high school section of the Tazewell County teachers' institute at Pekin, Ill., October 24 and 25; and the Northwestern Ohio State Teachers Association at Toledo, October 26.

The graduating class of the State Teachers College at Milwaukee, Wis., dedicated a row of elms on the campus "as a living tribute to the growth of constructive thought" to a selected number of educators. Professor Briggs was one thus honored.

Professor Maxie N. Woodring addressed the Macon County teachers' institute at Decatur, Ill., October 11 and 12, and the senior high school section of the eighty-sixth annual convention of the Hampden County Teachers Association at Springfield, Mass., October 26. Her subject at the latter meeting was "Youth Invades Our High Schools: A Challenge."

English Literature, the third and last of the three-volume series of anthologies for senior high schools, of which Professor Briggs is senior editor, was published in May by Houghton Mifflin Company. The other two volumes are *Romance* and *American Literature.*

At a conference of teachers college and normal school faculties of New York State, held at Albany October 18, Professor Fretwell was the leader of a panel discussion on the topic "Relative Values of Class and Extra-Class Activities."

Enriched Teaching of English in the High School, Revised and Enlarged Edition, of which Professor Woodring is co-author with Professor Ida A. Jewett of Teachers College and Miss Rachel T. Benson (Mrs. J. V. Bailey), formerly librarian in the Horace Mann School, has been published recently by the Bureau of Publications of Teachers College.

Professor Frank W. Cyr addressed the following meetings during October and November: the First District State Teachers Association at Lincoln, Neb., October 26; the Fifth District State Teachers Association at McCook, Neb., October 25; and the high school principals of third class districts at Topeka, Kan., November 2.

Mr. Lloyd N. Morrisett, who served as associate in the department of Secondary Education 1933–34 and taught two classes in high school administration during the Summer Session, has successfully passed his oral examinations for the doctorate. The title of his dissertation is *Letters of Recommendation as an Instrument for the Selection of Teachers*. Mr. Morrisett, formerly principal of the Classen High School, Oklahoma City, Okla., is now supervising principal at Cranford, N. J.

During the Summer Session the assistants in the department were as follows: To Professor Briggs, Mr. George H. Armacost, principal of the high school, Kane, Pa.; Mr. Earl H. Hanson, principal of the high school, Rock Island, Ill.; and Mr. Howard G. Spalding, principal of the high school, Lansdowne, Pa. To Professor Fretwell, Mr. Harold Spears, director of research, Evansville, Ind. To Professor Woodring, Mr. George C. Galphin, now professor of secondary education at Drexel Institute, Philadelphia, Pa.

Assistants in the department for the academic year 1934–35 are: To Professor Woodring, Mr. James H. Moyer, formerly principal of the senior high school, Manhattan, Kan. To Professor Briggs, Mr. James W. Richardson, vice-principal and counselor of boys, senior high school, Allentown, Pa.

A conference on supervised correspondence study, of which Professor Cyr was chairman, was held at Teachers College August 8, 9, and 10 for the purpose of formulating policies regarding such study as a practical means of enriching the curriculum of the American secondary school. Twenty-three representative workers in the field participated. The proceedings of the conference are now in print.

"A Guide to the Literature of Secondary Education," by Mr. Arthur J. Manske and Professor Carter Alexander, was printed in *School Review* for May 1934. A reprint will be sent to any inquirer who will write Professor Carter Alexander, Teachers College, Columbia University and enclose ten cents.

Student Personnel Administration

Professor Ruth Strang published through Harper & Brothers in September the first volume of her summaries of investigations relating to personal development and guidance in college and secondary school. This volume integrates the scattered data on the scope and administrative aspects of personnel work and on educational guidance. The first section includes investigations relating to personnel and guidance programs and officers; the second summarizes articles on the selection and orientation of students; and the third is organized under "withdrawal from high school and college," "failure in academic work," "success in academic work," "choice of college," and "technics of study."

Professor Sarah M. Sturtevant addressed the Intercollegiate Conference on Student Government October 17 at Allegheny College, Meadville, Pa. Her topic was "The Philosophy of Student Participation in Government." On October 20 she addressed the meeting of the Western Pennsylvania Association of Deans of Women and Advisers of Girls in Pittsburgh. Professor Sturte-

vant also addressed the Maine Teachers Association meeting in Portland October 25 on "Some Trends in the Development of Student Personnel Work." On October 27 she spoke before the New Jersey State Deans Association in Newark, N. J., on "Some Questions Concerning the Contribution and Status of Deans of Women and Girls."

Several of the former students in the department have recently been appointed to interesting positions in the field: Miss Alice Brown (M.A. 1934) has been appointed head of residence at the New Jersey College for Women, New Brunswick; Miss Marion Galton, who completed her work for the Master's degree during the 1934 Summer Session, has been made dean of women, State Teachers College, Slippery Rock, Pa.; Miss Emily Post (Teachers College 1933–1934) has been appointed dean at Fairfax Hall, Waynesboro, Va.; Mrs. Mary F. Swaney (M.A. 1934) has been appointed academic dean at The Dearborn-Morgan School, Orange, N. J.; Miss Alida P. Banks (M.A. 1934), formerly assistant to Dean Slowe of Howard University, has been appointed dean of women at West Virginia State College, Institute, W. Va.; Miss Harriet Harrison (M.A. 1934), formerly head of the department of physical education at the State Teachers College, Duluth, Minn., has been appointed dean of women in that institution.

Miss Lulu Holmes, dean of women at Drury College, Springfield, Mo., and a candidate for the Doctor's degree at Teachers College, has been granted a year's leave of absence and is teaching history in Kobe College, Japan.

Professor Esther M. Lloyd-Jones spoke before the Central Branch of the Brooklyn Y. W. C. A. October 8 on "How Does an Individual Grow in Order to Live Most Effectively?" On October 25 she addressed the parent group of the Horace Mann School on "What Boys and Girls Themselves Think Helps Them to Grow."

Bureau of Educational Service*

The following list continues the changes in positions reported by the Bureau of Educational Service in the October RECORD:

Mehlenbacher, Vera (B.S. 1932), from first and second grades, Coburn School, Miami Beach, Fla., to kindergarten teacher, First Street School, South Orange, N. J.

Mendenhall, Paul, appointed teacher of science, New York State Training School, Warwick, N. Y.

Merrill, Esther Alice (B.S. 1932), from third grade teacher, Beach Park School, West Hartford, Conn., to first grade teacher, Clinton School, South Orange, N. J.

Messenger, Dorothy E., from music supervisor, Public Schools, Colville, Wash., to teacher of science and music, Junior High School, Lewiston, Idaho.

Miller, B. Lawson (M.A. 1927), from editorial assistant, General Foods Corp., New York City, to home demonstration agent, New Jersey State Agricultural College, New Brunswick, N. J.

Miller, Josephine E. (M.A. 1926), from instructor in English, Lake Forest College, Lake Forest, Ill., to teacher of English, Junior-Senior High School, Montpelier, Vt.

Mitchell, Janet D. (B.S. 1934), from teacher in elementary grades, House of Refuge, Randall's Island, N. Y., to teacher of music, Calhoun School, New York City.

Mode, Katherine (B.S. 1930), from teacher of second grade, Tower Hill

* Any student who is taking or has taken twelve points of work at Teachers College or any graduate of Teachers College may register with the Bureau of Educational Service. No fee is charged. For full information write to the Bureau for copies of its booklets, *Seven Factors in Getting a Position* and *The Right Person for the Right Position.*

School, Wilmington, Del., to teacher of second grade, Ethical Culture School, New York City.

Moore, Hilda M. (M.A. 1933), from assistant in industrial arts department, Horace Mann School, Teachers College, Columbia University, to teacher of fine arts, High School, Garden City, N. Y.

Morris, Melvin M., from research work, Bell Telephone Laboratory, New York City, to teacher of science, Berkeley-Irving School, New York City.

Moseley, Frances F. (M.A. 1934), from teacher of home economics, High School, Hamlet, N. C., to teacher of home economics, Dearborn-Morgan School, Orange, N. J.

Murlin, Jason C. (M.A. 1932), from instructor in science, Public Schools, Plymouth, Ohio, to superintendent of schools, North Fairfield, Ohio.

Muzzey, Doris Soule, from head of commercial department, Lawrence High School, Fairfield, Me., to executive assistant, Lichten Bros. Inc., Empire State Building, New York City.

Nelson, Henry B. (M.A. 1931), from teacher of music, Junior and Senior High School, Elkins Park, Pa., to supervisor of music, Public Schools, Scotia, N. Y.

Neuschafer, Marie, from teacher of health education, Child Education Foundation, New York City, to school nurse, W. K. Kellogg Foundation, Battle Creek, Mich.

Newcomb, Theodore M. (Ph.D. 1929), from assistant professor of psychology, Cleveland College, Cleveland, Ohio, to teacher of psychology, Bennington College, Bennington, Vt.

Oakes, Margaret B. (M.A. 1933), from teacher of mathematics, High School, Southbridge, Mass., to teacher of mathematics, Barnard School for Girls, New York City.

Oberholtzer, Kenneth E., from superintendent of schools, El Campo, Tex., to superintendent of schools, Lubbock, Tex.

Ogden, Ruth I. (M.A. 1933), appointed teacher of homemaking, Public Schools, Rockville Center, L. I.

Ogilvie, Mardel, from teacher at Sequin School, East Orange, N. J., to teacher of mathematics, Union High School, South Fallsburg, N. Y.

Osborn, Ida E. (M.A. 1933), appointed representative, Pictorial Review Pattern Co., New York City.

Osborne, Agnes E., from teacher of commercial education, High School, Ellsworth, Kan., to teacher of commercial education, Miss Conklin's Secretarial School, New York City.

Ott, Fina C., from executive librarian, Proviso Township High School, Maywood, Ill., to instructor in English, Otterbein College, Westerville, Ohio.

Owen, Eivion (M.A. 1933), from assistant professor of English, University of British Columbia, Vancouver, B. C., to lecturer in English, Bishop's College, Lennoxville, Quebec, Can.

Parker, Helen Louise (M.S. 1934), from dietitian, Protestant Hospital, Dodge City, Kan., to assistant house manager, Bard Hall, Medical Center, New York City.

Parson, Venetia C. (B.S. 1934), from assistant dietitian, New York Orthopedic Hospital, White Plains, N. Y., to teacher of homemaking, Knox School, Cooperstown, N. Y.

Patton, Gladys (M.A. 1931), from teacher in grades, Public Schools, King City, Mo., to teacher of household arts, High School, Brookfield, Mo.

Patton, Julia U. (B.S. 1933), appointed teacher of physical education, The Dalton School, New York City.

Payne, Anna R. (M.A. 1930), from teacher of fifth and sixth grades, Lucy Paxton Country Day School, Stamford, Conn., to teacher of sixth grade, Utica Country Day School, New Hartford, N. Y.

Peat, Jane E. (B.S. 1931), from biochemistry laboratory assistant, Teachers College, Columbia University, to assistant dietitian, Long Island College Hospital, Brooklyn, N. Y.

Peik, Esther (M.A. 1933), appointed teacher of social sciences, High School, Pelham, N. Y.

Pendleton, Helen A. (M.A. 1932), from teacher of Latin and French, Central High School, New Paltz, N. Y., to teacher of Latin, High School, Malverne, L. I.

Pennell, Alfred R., appointed teacher of mathematics, High School, Nyack, N. Y.

Phelps, John R., appointed supervisor of music, High School, Silver Creek, N. Y.

Phifer, Juliette V. (M.A. 1933), from grade teacher, Public Schools, Greensboro,

N. C., to critic teacher, State Normal School, Fayetteville, N. C.

Pittman, Marvin S. (Ph.D. 1921), from director of laboratory schools, Michigan State Normal College, Ypsilanti, Mich., to president, South Georgia Teachers College, Statesboro, Ga.

Pittser, Chester M. (M.A. 1932), from assistant professor of physical education, Miami University, Oxford, Ohio, to director of physical education, State Teachers College, Montclair, N. J.

Pond, Elizabeth B. (M.A. 1929), from girl reserve secretary, Y. W. C. A., Chicago, Ill., to girl reserve secretary, Y. W. C. A., Des Moines, Iowa.

Porter, Elizabeth Leigh (M.A. 1932), from teacher of Latin and English, High School, Oceana, Va., to teacher of English, Latin, and French, High School, Holland, Va.

Porter, Lillian R. (M.A. 1931), from teacher of home economics, Knox School, Cooperstown, N. Y., to teacher of home economics and Latin, Junior High School, River Edge, N. J.

Porter, Mame T. (M.A. 1927), from chief dietitian, Toronto General Hospital, Toronto, Can., to nutritionist, Temporary Emergency Relief Administration, Utica, N. Y.

Post, Kathreen C., from teacher of eighth grade, Horace Mann School, Teachers College, Columbia University, to teacher of third and fourth grades, Francis W. Parker School, San Diego, Calif.

Pote, Jean (M.A. 1934), appointed teacher of clothing, Junior High School, East Orange, N. J.

Potts, Katherine M. (M.A. 1932), appointed counselor, Bureau of Vocational Service, Los Angeles, Calif.

Power, Nora Neill (M.A. 1928), from dean of residence, Bradford Junior College, Bradford, Mass., to dean of women, University of Louisiana, Baton Rouge, La.

Pridgen, Katie B. (M.A. 1932), from director of teacher training, Averett College, Danville, Va., to supervisor of elementary schools, Pittsylvania County, Va.

Pritchard, Margaret (M.A. 1934), from teacher of home economics, Lincoln Junior High School, Bremerton, Wash., to instructor in home economics, University of Delaware, Newark, Del.

Pryde, Christena (B.S. 1933), from teacher of English, High School, Millburn, N. J., to teacher of English, High School, Saybrook, Conn.

Purtell, Josephine M. (M.A. 1933), appointed teacher of all subjects, sixth grade, Public School, Cudahy, Wis.

Quayle, Margaret S. (M.A. 1928), appointed psychologist and dean of students, Bradford Junior College, Bradford, Mass.

Quinlan, Maurice J., from instructor in English, Dartmouth College, Hanover, N. H., to instructor in English, Mount St. Joseph's College, Hartford, Conn.

Reber, Mary McGhee (M.A. 1934), from teacher of social science, Junior High School, Lewisburg, Ala., to teacher of English and dramatics, High School, Wilmington, Del.

Reece, Laurence (M.A. 1925), from teacher of elementary group, Manumit School, Pawling, N. Y., to teacher of elementary group, The Woodward School, Brooklyn, N. Y.

Reid, Janet M., from teacher of grades one to eight, Cragsmoor, Ulster County, N. Y., to teacher of third grade, Public Schools, Glenwood Landing, N. Y.

Remsberg, Margaret, appointed kindergarten teacher, Playhouse Nursery School, Baltimore, Md.

Remsen, Anna Louise (M.A. 1934), appointed kindergarten teacher, New York Kindergarten Association, New York City.

Richards, Pearl Jeannette, from teacher of home economics, High School, Glastonbury, Conn., to demonstrator, New York and Queens Electric Co., Long Island City, N. Y.

Riddell, Lila Lee (M.A. 1928), from director of home economics education, Georgia State College, Milledgeville, Ga., to teacher of clothing, Drexel Institute, Philadelphia, Pa.

Riggs, Caroline, from teacher of science, Miss Mason's School, Tarrytown, N. Y., to teacher of science and mathematics, All Saints School, Sioux Falls, S. D.

Ritch, Charles F., Jr., appointed teacher of social studies, Greenwood School, Des Moines, Iowa.

Ritchie, Roland C. (M.A. 1933), from physical director, The Dalton School, New York City, to physical director, The Morgan School, Clinton, Conn.

Roberts, Holland D., from supervising principal, Public Schools, Harrison, N. Y., to supervisor of English, Stanford University, Calif.

Robinson, Florence L. (B.S. 1927), from principal, Kennebec Valley School, Augusta, Me., to supervisor and teacher of elementary grade, Utica Country Day School, New Hartford, N. Y.

Robinson, Mabel H., from director of nursery school, Garfield School, Detroit, Mich., to kindergarten teacher, Public Schools, Lancaster, N. Y.

Robitaille, Charles E., appointed instructor in English, West Side High School, Manchester, N. H.

Robson, Mrs. Barbara Reid (M.A. 1933), appointed manager, Berkeley Women's City Club, Berkeley, Calif.

Roche, S. Agnes (M.A. 1922), appointed teacher of history, Clark School, East Orange, N. J.

Roffers, Clara (M.A. 1932), from director of music, Rye Country Day School, Rye, N. Y., to teacher of music, Franklin High School, Green Bay, Wis.

Rogers, Virgil Madison, from superintendent of schools, Gunnison, Colo., to superintendent of schools, Boulder, Colo.

Ross, Alia J. (M.A. 1933), appointed teacher of music, Consolidated School, Hudson, N. C.

Rudd, Maridel (M.A. 1934), appointed nursery school teacher, Lincoln Park Day Nursery, Denver, Colo.

Rumsey, Alice L. (M.A. 1933), appointed teacher of English, High School, Manchester, Ohio.

Sample, Augusta (M.A. 1933), appointed assistant professor of spoken English and dramatics, Greensboro College, Greensboro, N. C.

Samuelson, Ralph O., from teacher of social science, High School, Bellows Falls, Vt., to teacher of social sciences, Junior High School, Newton Center, Mass.

Sanderson, Ruth L., appointed teacher of special classes, Public Schools, Cos Cob, Conn.

Sanford, Frances A. (M.A. 1932), from teacher of home economics, Moon River School, Sunnyside, Nev., to teacher of home economics, Windsor Central School, Windsor, N. Y.

Sanne, Alice C. (M.A. 1932), appointed to music position, Trinity Lutheran Church, Brooklyn, N. Y.

Santon, Mildred B., from assistant in educational psychology, Teachers College, Columbia University, to instructor in education, Connecticut College, New London, Conn.

Scanlan, Mary Ann (M.A. 1933), from rural teacher, Cedar Falls Township School, Cedar Falls, Iowa, to normal training supervisor, High School, Cherokee, Iowa.

Scovell, Margaret (M.A. 1933), appointed professor of English, Ozark Wesleyan College, Carthage, Mo.

Scovell, Maurine (M.A. 1933), appointed teacher of English, High School, Herington, Kan.

Scudder, Lillian M., from teacher of Latin, High School, Geneva, Ohio, to teacher of Latin, High School, East Hampton, N. Y.

Seasholtz, Mary Braeme (M.A. 1931), from teacher of art, Public Schools, Montclair, N. J., to teacher and supervisor of art, Special District School, Claymont, Del.

Severin, Erna A., from teacher of elementary grades and art, Great Neck Preparatory School, Great Neck, N. Y., to teacher of fourth grade, Public Schools, Pelham, N. Y.

Shenk, Dorothy C., from teacher of third grade, Public Schools, Bethlehem, Pa., to third grade critic teacher, State Normal School, Cortland, N. Y.

Simonds, Harold S. (M.A. 1934), appointed teacher of mathematics, Memorial High School, Pelham, N. Y.

Sinclair, Carrie C., from instructor in health and physical education, College of William and Mary, Williamsburg, Va., to director of health and physical education, Matthew Whaley School, Williamsburg, Va.

Smith, George K., from teacher of English and social sciences, Junior High School, Madison, N. J., to teacher of English, Horace Mann School for Girls, Teachers College, Columbia University.

This list is to be continued in the December RECORD.